

**DIETRICH MATESCHITZ**  
EXCLUSIVE: LOST INTERVIEW WITH RED BULL VISIONARY

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smashed Formula 1's  
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## Verstappen's numbers don't lie

**It was always likely** to happen, of course: a driver of Max Verstappen's calibre would come along and not only perform a world championship masterclass, but also crash through an F1 record defined by excellence: that of the sheer number of wins in a season. There are those who point out, churlishly, that this was a growing possibility given the expansion of the season in recent years. Yes, there were only 18 races when Michael Schumacher racked up 13 wins in 2004; and, similarly yes, 19 when Sebastian Vettel equalled the record in 2019.

Max nailed his 13th win this year in race 19 but, aside from the bare statistics, 2022 has felt less grindingly inevitable in terms of outcomes than either 2004 or 2013, in which both record-setting drivers enjoyed by far the best car on the grid. This isn't to underplay the contribution of the driver; but the RB18, while certainly *the* car of the season, isn't as utterly dominant as the F2004 (whose margin of superiority surprised even Ferrari) or the RB9 (which attained untouchable status after Pirelli changed tyre constructions mid-season).

Dare I commit a further blasphemy? The record-breaking seasons represented career peaks for Schumi and Seb, neither of whom would win another world title. With Max there's more to come – and this is no banal, posturing 'hot take': key Red Bull figures agree, as Justin Hynes reveals on p34.

Red Bull's constructors' championship win was tinged with sadness after the passing of brand founder Dietrich Mateschitz, a man who was the

veritable opposite of most 21st century billionaires. No Elon Musk, he: Mateschitz eschewed the spotlight, letting the Red Bull brand speak for itself through a portfolio of daring marketing campaigns in which sportspeople were the stars. Shortly after Mateschitz acquired two F1 teams, thereby joining the ranks of F1's pre-eminent movers and shakers, the publicity-shy energy drink magnate sat down with future *GP Racing* editor Anthony Rowlinson to outline his plans for the brand in F1. Originally planned for the limited-edition F1 Opus book, the interview went unpublished at the time. We present it in its original form, which represents a fascinatingly prescient take on Red Bull's time in F1. Mateschitz's influence was transformative without any need for him to take centre stage.

*GP Racing* is also saddened to note the passing of Mauro Forghieri. While the term 'legend' is often bandied around too easily, in Forghieri's case it almost undersells this technician's contributions to F1 technology. Few engineers in recent F1 history have come so close to epitomising the Renaissance concept of *l'uomo universale* – Forghieri innovated in the fields of chassis, engine and gearbox design. He was an all-round artist; ultra-specialised modern F1 will never see his like again.

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### Contributors



#### JUSTIN HYNES

Justin explains why Max Verstappen's path to a second world title wasn't as simple and straightforward as it appeared (p34)



#### ANTHONY ROWLINSON

A previously unpublished interview with Red Bull founder Dietrich Mateschitz, courtesy of our former editor, makes an interesting read (p44)



#### LUKE SMITH

A two-year stint as Fernando Alonso's team-mate was one of the subjects Luke brought up in his chat with Esteban Ocon (p56)



#### JAKE BOXALL-LEGGE

*Autosport's* technical editor details exactly what the snappily titled Aerodynamic Oscillation Metric is, and why it's important (p52)

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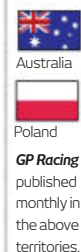
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## Dedication's what you need

Max Verstappen became a record breaker again in Mexico, surpassing the benchmark of 13 grand prix wins in a season held jointly by Sebastian Vettel and Michael Schumacher.

At this track it's always a bit of a lottery for photographers at the end of the race. You have to guess where the FIA will put out the number boards for the top three finishers inside the stadium section. I picked my spot about half way through the race, knowing it would be packed come the end and I'd have to fight to keep it.

Luckily enough, Max parked opposite and looked right over me to the fans seated behind, which is what makes this frame.



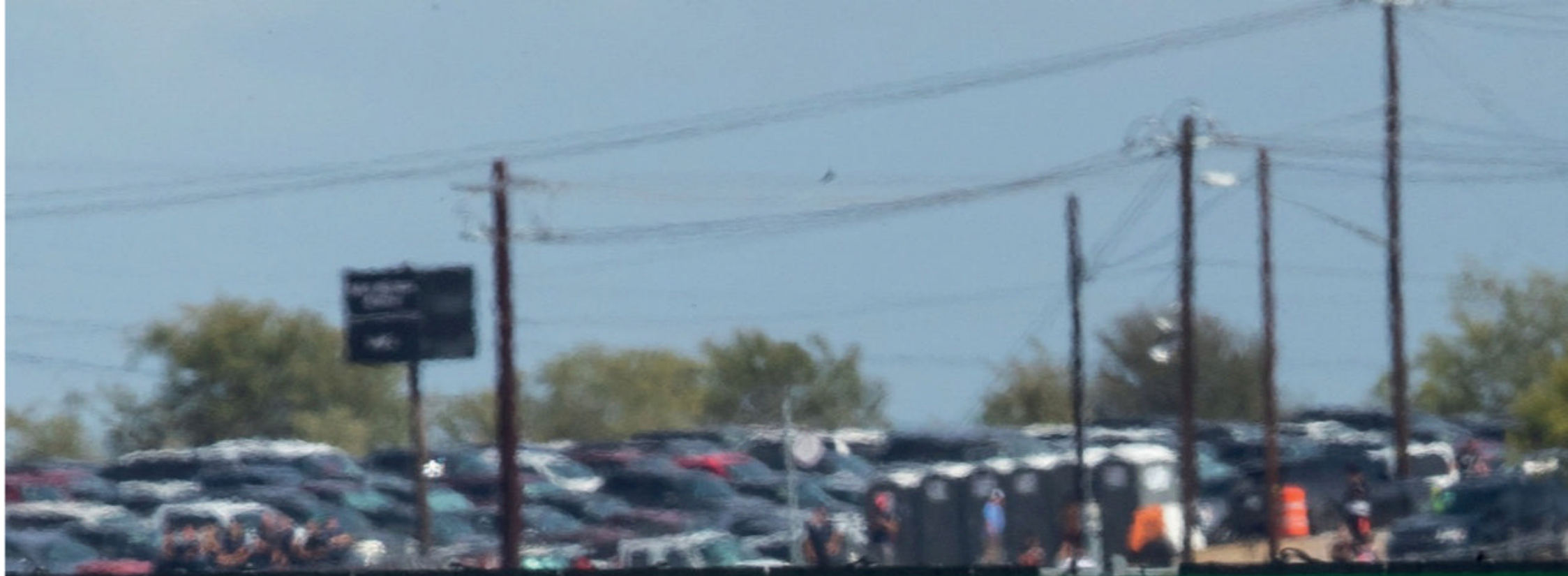
**Photographer**  
Sam Bloxham

**Where** Mexico City, Mexico

**When** 3.44pm, Sunday  
30 October 2022

**Details** Canon EOS R3  
70-200mm lens, 1/2500 @ F2.8







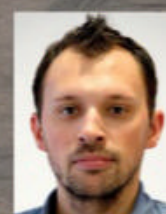


## 'Joust' not enough room; Lance is unseated

While there are quite a few places where it's possible to overtake at the Circuit of The Americas, Turn 12 is one of the busiest in terms of action. It also has quite a busy and cluttered background with all those parked cars and telephone poles, but you overlook that for all the overtaking.

I was actually looking at the battle between Lewis Hamilton and Sergio Pérez when Lance Stroll and Fernando Alonso collided. It appeared to spring from a slight misjudgement of space through that kink.

Given the impact speed, it was amazing to see Alonso carry on and finish the race...



**Photographer**  
Carl Bingham

**Where** Austin, USA  
**When** 2.43pm, Sunday  
23 October 2022

**Details** Canon EOS-1DX MkII  
600mm lens, 1/1600 @ F7.1







## The crowd pleaser prepares to exit

While it's a little sad to see a driver as popular as Daniel Ricciardo lose their seat in Formula 1, I'm glad he had a good race in Mexico after I captured this nice shot of him in action during practice.

The former baseball stadium has a great atmosphere and plenty of people in their seats to make a colourful blur in this panning shot of the car heading towards the tunnel and the Nigel Mansell corner. McLaren's contrasting black and orange livery really suits this composition.

The Mexican crowd are great, too – really welcoming and they didn't mind a photographer setting up in their midst. Someone even offered me a beer!



**Photographer**  
Steven Tee

**Where** Mexico City, Mexico

**When** 12.21pm, Saturday  
29 October 2022

**Details** Canon EOS R3  
70-200mm lens, 1/20 @ F22



## Lewis still leads the podium pack

For the podium shot I returned to a spot in the stadium I'd scoped out earlier in the weekend and joined the crowd as the mayhem began. The elevated perspective you get from being in the grandstand potentially makes this shot, but it still relies on the drivers helping you out by standing in the right place.

To that end I was quietly delighted to see Lewis finish in the top three. While many of the younger drivers still think it's funny to wander off or chase and douse the team member who's been sent up to collect the constructors' gong, Lewis always comes to the front. As you can see here, the others have followed his lead.



**Photographer**  
Steven Tee

**Where** Mexico City, Mexico  
**When** 4.01pm, Sunday  
30 October 2022

**Details** Canon EOS R3  
400mm lens, 1/1600 @ F5.6









## It's not Red Bull's first rodeo

The peculiar, not to say rather farcical, circumstances of the Japanese Grand Prix meant Red Bull didn't get a proper opportunity to celebrate Max Verstappen's world championship win. But the team had another chance to get back on the horse in Austin, where it was pretty much nailed on for the constructors' title.

The mechanics had gone out and bought a set of virtually identical cowboy hats to wear for the parc fermé celebrations and Max duly ran over. I'd managed to get into the Paddock Club to shoot it from above – and I'm quite relieved I did, given the sight of all the other snappers squashed in there...



**Photographer**  
Steven Tee

**Where** Austin, USA  
**When** 3.50pm, Sunday  
23 October 2022

**Details** Canon EOS R3  
70-200mm lens, 1/1000 @ F5.6









# RED BULL HITS BACK AT SPORTING COST-CAP PENALTY

**01** A total of \$7,450,000 in fines will be collected by the FIA from Red Bull and Aston Martin once proceedings are completed over the teams' infringements of financial regulations in 2021. \$450,000 of these will be paid into the coffers of the federation by Lawrence Stroll's team. The rest will come from Red Bull. Yet when Christian Horner called the penalty "draconian", he did not refer to the fine – but the sporting penalty his team has been issued as the only one that failed to meet the allocated 2021 budget limit.

That Red Bull had committed an overspend last year was initially discussed during the Singapore Grand Prix – albeit at the level

of rumours, yet still with a degree of confidence. The official confirmation came after the race in Japan – by sheer coincidence (although Horner, judging by his words to the media, isn't entirely convinced) the very race where Max Verstappen clinched his second championship.

## RED BULL WILL ALSO LOSE 10% OF ITS AERODYNAMIC TESTING TIME WITHIN 12 MONTHS

More details emerged two weeks later during the Mexican Grand Prix weekend when the FIA published two documents revealing the breaches by Red Bull and Aston Martin. The latter was only fined, because it declared some items of expenditure incorrectly without actually exceeding the limit prescribed in the regulations. Red Bull, though, *did* overspend.

In an FIA-issued document after it reached an agreement with Red Bull, it was stated the team had initially submitted a report according to which it had come in below the cost cap in 2021. However, "according to the findings" of the FIA's Cost Cap Administration, the submitted report was inaccurate. Red Bull, said the regulator, "wrongly excluded and/or adjusted certain costs" amounting to £5,607,000.

The FIA listed 13 instances of incorrect interpretation of the regulations. These included social security contributions for staff, apprenticeship levies, the cost of using the power units, a clerical error in the calculation of costs charged to Red Bull by Red Bull Powertrains, and even catering service

PICTURES: MARK SUTTON; CARL BINGHAM



**The reduction on aero testing will hit Red Bull harder than the fine, since it will have a direct effect on car development and therefore laptime**

costs. However, no further details were provided.

All that is known is that after the FIA's corrections the excess amounted to £1,864,000, but the FIA pointed out the team made another miscalculation, this time to its own detriment, having failed to apply the correct treatment of its Notional Tax Credit of a value of £1,431,348. Thus, the actual figure by which the team would have exceeded the limit – had it submitted the report the FIA felt it should have – was £432,652, representing 0.37% over the limit.

The FIA separately noted that "there is no accusation or evidence that Red Bull Racing has sought at any time to act in bad faith, dishonestly or in a fraudulent manner, nor has it wilfully concealed any information from the Cost Cap Administration." This appears to have been taken into account in choosing the penalty, although Red Bull's interpretation of the sanction's severity differs from its rivals.

Besides the \$7million fine, Red Bull will also lose 10% of its aerodynamic testing time within 12 months, starting from the



## 02 | CONSISTENTLY INCONSISTENT

'Mirror-gate' raises issues with race control



moment of it reaching its agreement with the FIA. And there lies the key question: is it enough of a penalty for a team that was the only one to exceed the limit in the first year of the new regulations, and whose driver in that year brought it a first title in nearly 10 years?

For Horner, it is that aero testing restriction which will have the greatest impact. "I can tell you now, that is an enormous amount," he said at a press conference in Mexico. "That represents anywhere between a quarter and half a second's worth of laptime. That comes in from now, that has a direct effect on next year's car, and will be in place for a 12-month period. That 10% put into reality will have an impact on our ability to perform on-track next year. It gives an advantage to our competitors, which is why they were pushing so hard for a draconian penalty."

Some of those competitors allowed themselves to disagree with the Red Bull boss's words.

"Two million [of overspend] is a significant amount and

## 03 | LOOK WHO'S (NOT) TALKING

Drivers take issue with media



Horner gave a special press conference in Mexico (above) to respond to the "draconian" sporting penalty. Mekies (left) wasn't impressed by the FIA's decision

we have given our opinion several times on this topic," said Ferrari's Laurent Mekies. "We at Ferrari think this amount is worth around a couple of tenths [per lap]. We do not understand how the 10% reduction of the ATR [Aerodynamic Testing Restrictions] can correspond to the same amount of laptime we mentioned earlier.

"Furthermore, there is another problem in that. Since there is no cost-cap reduction in the penalty, the basic effect is to push the competitor to spend the money elsewhere. It has total freedom to use the money it can no longer spend on use of the wind tunnel and CFD due to the 10% reduction, on reducing the weight of the car, or who knows what else.

"Our concern is that the combination of these two factors means the real effect of the penalty is very limited."

The presence of such polarised opinions usually indicates a good compromise has been found. But in this case the real impact of the penalty can only be judged next season – or even, perhaps, the season after... ►



## TO FLAG OR NOT TO FLAG?

**02** It's a widely shared F1 belief that the reforms implemented by the FIA after last year's Abu Dhabi farce have added to rather than subtracted from potential inconsistencies in race management. The story of Fernando Alonso's US GP penalty, and its subsequent annulment, may well widen the pool of believers.

For around half of the race in Austin, Alonso was running with a dangling rear-view mirror as a result of his collision with Lance Stroll – but even within the FIA itself there were differing views on whether or not this posed a danger. Race director Niels Wittich saw no particular problem. The stewards, on the contrary, were puzzled as to why Alonso wasn't shown a black and orange flag to direct him into the pits for the mirror to be removed. However, they only got to voice their opinion on the matter after the end of the race, following a Haas protest.

Gunther Steiner's team had another motive beyond bumping its drivers up the finishing order and scoring more points. To Haas the question was one of consistency: three times this season, before Austin, Kevin Magnussen had been flagged for front-wing endplate damage, forcing him to make an additional pitstop. Alonso was permitted to keep on racing in Austin – either because the rear-view mirror is less of a danger in the opinion of the race director, or because it wasn't the same race director. A curious detail is that in all three races in which the flag was shown to Magnussen Eduardo Freitas was in the role, whereas in Austin it was Wittich.

Some might say this example clearly demonstrated how the idea of rotating race directors, while introduced with good intentions, has created inconsistencies.

Alonso's offending mirror at an angle (above), before it fell off. Magnussen in Hungary (below) was forced to pit for this front wing damage



The saga continued to take peculiar turns as the stewards accepted Haas's protest and upheld it, giving Alonso a penalty of an extra 30 seconds added to his final result. The verdict itself contained a couple of striking remarks. Apart from criticising the race director for not calling Alonso into the pitlane, the stewards also pointed out they accepted the protest even though Haas had submitted it 24 minutes later than the rulebook allows.

It was this which ultimately led to the cancellation of Alonso's penalty. Alpine lodged a counter-appeal on the grounds that Haas didn't meet the 30-minute deadline imposed by the rules. The FIA's International Sporting Code provides an amendment for such cases – teams can lodge protests later, but only if it is "impossible" to do so within the given timeframe. Alpine's sporting director Alan Permane's main argument during the hearing was the Oxford Dictionary's definition of the word "impossible" as "being something that cannot happen or be achieved". Even Haas conceded it was perfectly possible to have made its protest in time. But – and this is possibly the most absurd detail in the entire story – the protest had been lodged late because the FIA had informed Haas it had an hour to do it, not 30 minutes.

To put it simply: the FIA failed to show Alonso the black and orange flag during the race, then told Haas it could lodge its protest later than allowed by the regulations, then granted the protest, then overturned its own decision effectively on the basis that Haas had acted in accordance with its own recommendations... ▶

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## TRIAL BY MEDIA AS RED BULL BLANKS SKY

**03** **Max Verstappen** and the entire Red Bull team refused to talk to Sky Sports during the Mexican GP weekend in response to comments made by pitlane reporter Ted Kravitz during the *Ted's Notebook* segment of Sky's US GP broadcast. During the piece Kravitz returned to the subject of last year's Abu Dhabi race and the circumstances which led to Verstappen winning it.

What reportedly drew Max's ire was the claim Lewis Hamilton was "robbed" of the title by race director Michael Masi's decision to restart the race one lap before the finish, violating certain provisions of the regulations in doing so. But while this subject remains a contentious matter of debate within fan circles, certain facts are indisputable, as *The Times* sportswriter Matthew Syed pointed out in a column defending the broadcaster. The FIA's own investigation described Masi's failure to apply the rules correctly in Abu Dhabi as "human error".

Explaining his boycott, Max said he felt it was warranted after a series of similar comments.

"This year it's been a constant... kind of like daily being disrespectful," he said. "It's enough, I don't accept it. You can't live in the past. You just have to move on.

Social media is a very toxic place and, if you are constantly being like that live on TV, you make it worse instead of trying to make it better. You keep disrespecting me and at one point I'm not tolerating it."

"I think an accusation of championships being robbed is something that we don't feel is an impartial commentary," said Red Bull's Christian Horner.

In a separate but thematically related development, Fernando Alonso briefly deflected the epicentre of fan outrage by comparing the achievements of Hamilton and Verstappen, telling the Dutch newspaper *De Telegraaf* "it is different when you win seven world titles when you only had to fight with your team-mate". Cue headlines claiming Alonso considered Verstappen's championships of greater value. Battered by fan fury, Alonso spoke out on social media. "We need to stop putting the fans against each other," he wrote, without elaborating on who it is specifically that should stop doing it...



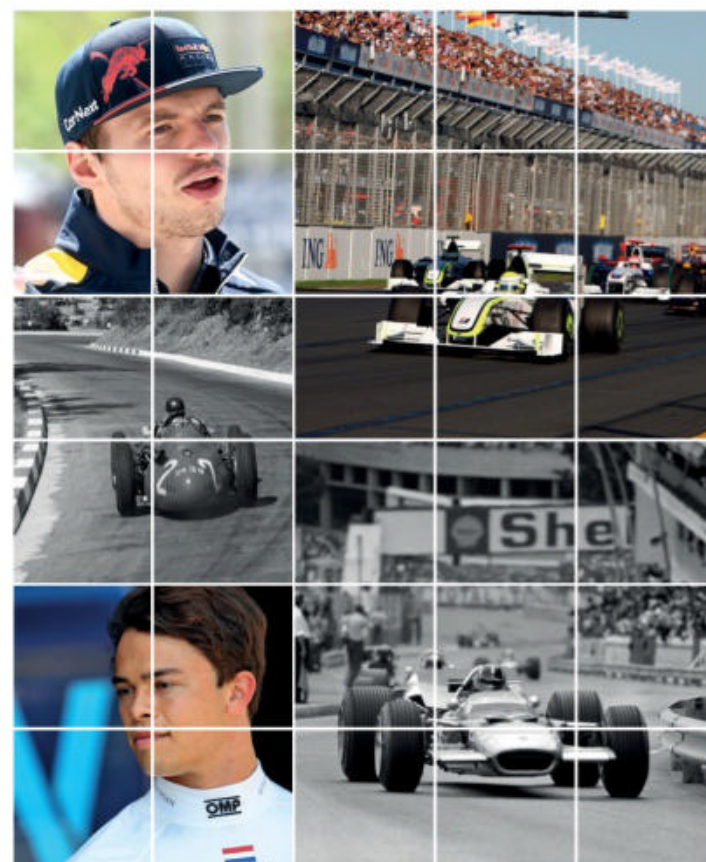
**Kravitz (left) interviews Horner in Australia. It was the Sky man's comments at the US GP that so annoyed Verstappen and the Red Bull team, which led to the Mexican boycott**

**"THIS YEAR IT'S BEEN A CONSTANT... KIND OF LIKE DAILY BEING DISRESPECTFUL. IT'S ENOUGH, I DON'T ACCEPT IT" MAX VERSTAPPEN**

## F1 MASTERMIND

Your chosen specialised subject: the world's greatest motorsport

- Q1** Which was the last team, before Mercedes, to get two drivers onto the Abu Dhabi podium?
- Q2** George Russell has led three races in 2022 (pre-Brazilian GP). Which three are they?
- Q3** Which is the only race so far in 2022 where all 20 cars are classified finishers in the official results?
- Q4** Graham Hill won five Monaco GPs from 1963 to 1969. Which two drivers won the race in 1966 and 1967, the two years Hill didn't win it?
- Q5** How many times has Daniel Ricciardo finished third in the drivers' championship?
- Q6** Who am I? I started 163 GPs from 1983 to 1993 for Arrows, Benetton, Williams, Ligier and Jordan, winning three times and claiming a single pole.
- Q7** True or false: Brawn won more races in its one season in Formula 1 than Ligier did in 20?
- Q8** How many Maserati 250Fs started the 1957 Pescara GP, from a grid of 16 cars: 4, 7 or 10?
- Q9** Of the five 'rookie' drivers in first practice for the 2022 Mexico City GP, Nyck de Vries and which other driver have actually started at least one GP?
- Q10** Which is the only circuit Max Verstappen has raced on in F1 but not been on the podium at?



**1** Williams (2014, Valtteri Bottas and Felipe Massa) **2** Spain, Hungary and Mexico **3** Hungarian GP **4** Jackie Stewart and Denny Hulme **5** Twice (2014 and 2016) **6** Thierry Boutsen **7** False (Ligier 9, Brawn 8) **8** 10 **9** Pietro Fittipaldi **10** Mugello

PICTURES: MARK SUTTON; WILLIAMS; MOTORSPORT IMAGES ARCHIVE





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PICTURES 

## CAN FERRARI SOLVE ITS ABU DHABI HEX?

**Spectacular and distinctive** aerial images are always a key part of Formula 1 TV coverage; one such eye-catching view in Abu Dhabi features the huge red roof of Ferrari World, a theme park adjacent to the Yas Marina Circuit. Inspired by the double curve of Ferrari's GT cars, one section of the roof carries the famous Prancing Horse logo which overlooks the hairpin of the circuit at Turn 5; the handsome animal had a good view of Max Verstappen overtaking Lewis Hamilton on the last lap in 2021 to wrap up the Max's first title.

That roof didn't exist when the first Abu Dhabi Grand Prix took place in 2009 but there wasn't much for Ferrari fans to get excited about: both cars failed to make the top ten in qualifying and remained pointless in the race. Kimi Räikkönen finished 12th, and Giancarlo Fisichella finished 16th in what was one of only five outings for the team and his last-ever grand prix.

One year later, as the huge amusement park opened for business, Ferrari had a real chance of celebration. Fernando Alonso was the team's

key player and, after a brilliant second half to the season, he was leading the title battle by eight points over Mark Webber and fifteen points to Sebastian Vettel, both driving for Red Bull. Qualifying third behind Vettel and Lewis Hamilton gave Alonso the opportunity to hold his position, or even lose one place, and he would still have taken his third world championship and Ferrari's seventh drivers' title in eleven years.

But strategy calls, as we have seen this year, haven't always been a strength for Ferrari. Desperate to cover whatever closest rival Mark Webber was doing, Ferrari brought Alonso in for fresh tyres to respond to an early stop by Webber. That meant Fernando dropped from fourth to 12th and, even more significantly, he found himself behind one of the fastest cars in a straight line. The Renault of Vitaly Petrov proved impossible to pass and ultimately Alonso finished in a lowly seventh place. Out front, Sebastian Vettel breezed to victory from pole and, as he took the points lead for the first time in his career, he also won his first title.

Despite another 11 attempts since then, Ferrari has been unable to match the glory of that vast red roof with even a single victory in Abu Dhabi. One of the closest opportunities was again thanks to Alonso who was cast into another title battle with Vettel in 2012, yet it was the driver whose Ferrari seat Fernando had taken nearly three years earlier who defeated him. Kimi Räikkönen delivered a resolute victory, dismissing all advice from his Lotus race engineers, and, despite Alonso closing

to within a second of his rival, there was no way to overtake.

Sebastian Vettel finished second for Ferrari at the twilight race in 2018 but Lewis Hamilton had full control and, while Charles Leclerc had an enticing battle with Max Verstappen in 2019, again it was never going to be for the win unless Hamilton's Mercedes broke down. It seems unfortunate that a venue with such explicit connections to the Ferrari brand (Abu Dhabi's sovereign wealth fund was a shareholder when the track was built, hence the construction of the theme park) hasn't been a happy hunting ground. Since 2009, Ferrari has managed to win at 18 different circuits but Yas Marina hasn't been one of them.

A victory this year for the Italian team would be key in so many ways; after an enticing yet frustrating year, next season could and should be a big one. There has been no doubt about the pace of the car, even if it hasn't developed quite as efficiently as the Red Bull in the latter part of the season. Engine power has been strong, downforce and slow-corner speeds have been advantageous and, while speed in a straight line has been a deficit to Red Bull, there is plenty to build on.

If the team can grab a win in Abu Dhabi it can have a huge influence going into the winter break, building confidence and determination after a year which at times has sapped its spirit. It would also be a historically empowering boost; so far, every time a constructor has won at the Yas Marina track at the last race of the season, that same team has gone on to deliver the drivers' title the following year.

Red Bull began the sequence by winning in 2009 with Vettel and stealing the title from Alonso a year later; he repeated that progression from 2010 into winning his second title in 2011. In 2011-2013, the final race was in Brazil, and the pattern did not exist, but as soon as it came back to finishing in Abu Dhabi, the sequence reoccurred with Hamilton and then Nico Rosberg, who won the race in 2015 and the championship a year later. Valtteri Bottas was the only driver who failed to convert his 2017 Abu Dhabi victory into a title the next year, but Mercedes maintained the link with Hamilton earning his fifth crown. The sequence nearly ended in 2021 when Red Bull's Max Verstappen, who had won in Abu Dhabi the previous year, looked like he was about to lose the title to Hamilton. Then the Safety Car came out, Max won both the title and the race, and now a subsequent title.

Winning the last race of the season at the Yas Marina circuit in Abu Dhabi really is a big thing. Can Ferrari finally crack it?





Leclerc had an entertaining battle with Max Verstappen in 2019 but had to settle for third at the chequered flag



Vettel had to be content with a few end-of-season donuts after he came second to Lewis Hamilton in 2018



Alonso's early stop in 2010 was a mistake that ended in a win and title for Vettel and Red Bull



Alonso came close in 2012 but lost out to the man he replaced at Ferrari in 2010, Kimi Räikkönen



Ferrari World dominates Abu Dhabi aerial pics, but the F1 team has yet to dominate the GP

PICTURES: STEVEN TEE; JOE PORTLOCK; MANUEL GORIA; MARIO RENZI; ILLUSTRATION: BENJAMIN WACHENJE.





# UNDER THE HOOD

PAT SYMONDS

PICTURES **motorsport** IMAGES

rapid reversal, during which the piston experiences over 600G of acceleration, puts enormous inertial loads on it. These are such that the 300-gram piston can have an apparent weight of nearly 2 tonnes.

On top of all this the piston has to withstand the enormous pressures and temperatures of combustion. For a given architecture of engine, the torque it can produce is a function of the pressure exerted on the piston. Racing engine design therefore tries to maximise this with very high compression ratios, high turbo boost and aggressive combustion. All of this leads to peak cylinder pressures which can reach or even exceed 200bar (nearly 3,000psi) in normal use. While the control systems on the engine will try and avoid knock it can

happen occasionally, sending the cylinder pressures much higher. Even at 200bar the load on the piston is around 10,000kg, equivalent to the weight of 12 F1 cars.

If this load wasn't enough, the piston also experiences very high temperatures. In the June issue we explored the amazing pre-chamber combustion system employed on current Formula 1 engines. While these are great for efficiency, allowing a very lean mixture to burn, they impose further stress on the piston as the plasma jets emitted from the pre-chamber impinge on the piston with even higher temperatures than the bulk combustion temperature, which itself will be over 2,500 degrees centigrade.

Of course no conventional metallic material could withstand these temperatures and so the piston needs cooling. While an amount of heat is conducted away through the piston rings to the cylinder wall, the majority of the cooling is done by squirting oil from dedicated jets onto the underside of the piston. The location and aiming of these jets is vital to minimising the chances of piston failure, but even this is enormously complex as the jets try to hit the correct part of the piston through the maelstrom that exists in the crankcase.

Petrol-engined road car pistons are made from a relatively conventional high-silicon aluminium and, other than for very high-performance cars, will be cast. For a racing engine pistons are forged, generally from high-quality aluminium alloys. For many years the material of choice was 2618 aluminium which had first been developed ▶

## PISTONS: LIVING IN A MATERIAL WORLD

Among the many innovations brought to the sport during the last season was an element of 'show and tell'. Formula 1 engineers are, by nature, extremely secretive. Many would say overly secretive. However there are many fans who take a keen interest in the technical aspects of the cars and follow their development avidly. The show and tell requires each team to disclose to the FIA the changes it's made to its cars. The FIA then collates and publishes this while the team has to put its cars, and a reluctant engineer, on display to journalists before the cars run on Friday.

Of course most of the development that takes place during the season is concerned with aerodynamics and the changes made are generally quite visible once pointed out. Components under the skin are far more difficult to see although each team employs photographers to try and capture details on their rivals' cars. Some details, of course, will remain forever hidden and this month we're going to look at one of these – the piston.

The piston must be the most abused component



**Pistons – these are from a road car V6 – are some of the most hard-working parts in a racing car but will always remain hidden from prying eyes**

on a racing car. Hidden deep in the engine, it experiences some amazingly harsh conditions. Although current engines are allowed to rev to 15,000 rpm, they rarely exceed 13,000 owing to the fuel-flow limitations. Even at this speed the piston has to travel up the bore and back down again over 200 times a second. Before reading on, just think about that number. If one were able to see the piston it would be a blur. On each revolution of the engine it's travelling down the cylinder, accelerating from zero to around 60 mph and back to zero in just over 2 milliseconds before reversing and travelling back up the cylinder. The



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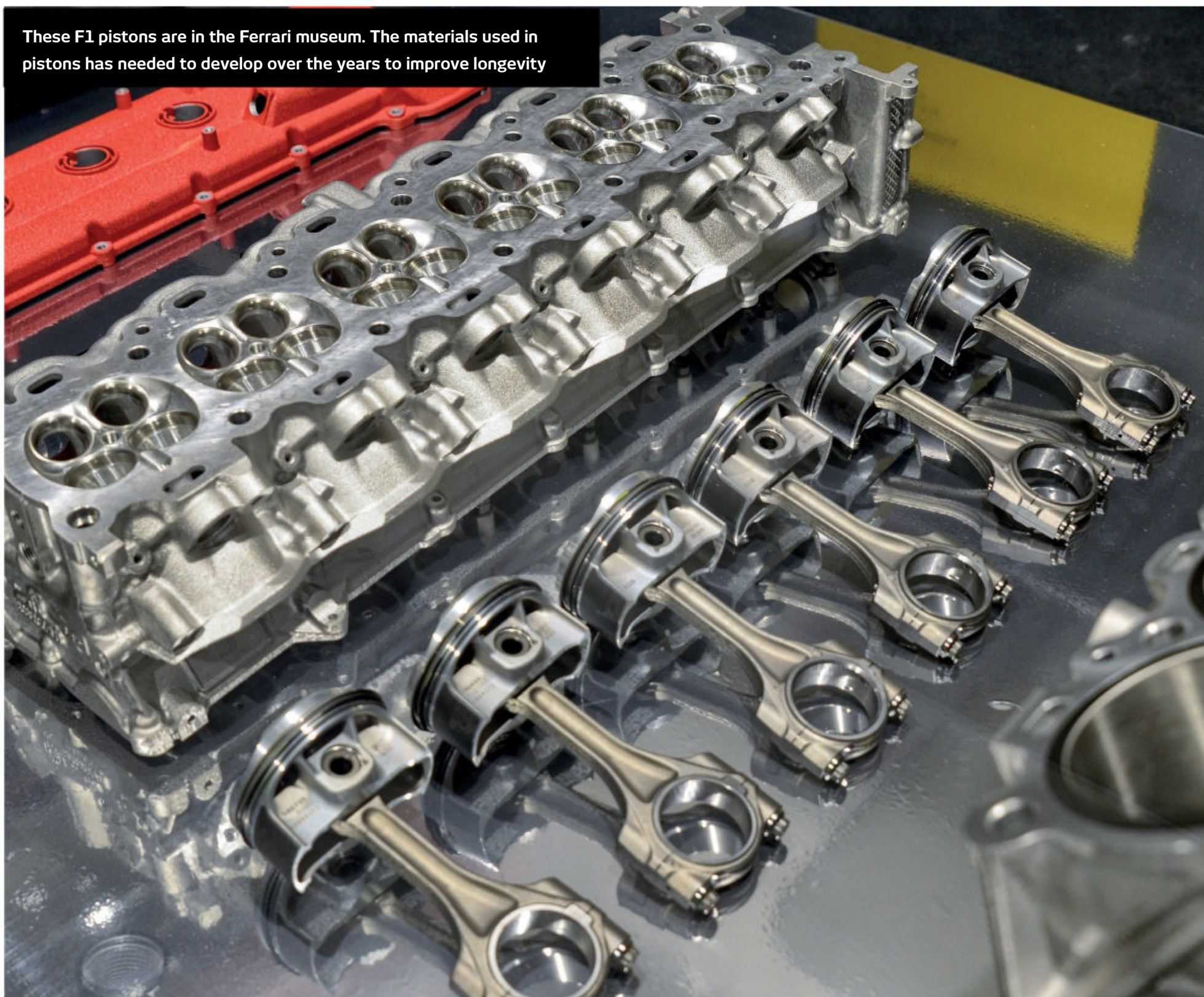
This unique set from Scalextric, will take you on a nostalgic trip to reimagine the twists, turns and turbocharged thrills of racing in the 1980's. Scalextric pays tribute to one of motorsports most prolific talents in this set which features two of the most iconic cars of the era.



FIND OUT MORE



These F1 pistons are in the Ferrari museum. The materials used in pistons has needed to develop over the years to improve longevity



by Rolls Royce for aero engines in WW2. Over the years materials developed rapidly. Aluminium beryllium was the ultimate although it was outlawed in 2000 owing to the health hazards of machining it. High lithium-content alloys are banned on cost grounds, so relatively common materials such as 2219 aluminium are used these days.

However, the introduction of the hybrid turbo engines to F1 in 2014 highlighted the frailty of even these high-performance materials. Damage to the piston crown from detonation and ring groove wear became limiting factors. This led to more complicated arrangements: multiple inserts and coatings were needed to make the base material survive the rigours associated with the arduous conditions (and extended life expected of the new generation of engines). One of these coatings was Diamond-Like Carbon, DLC, an exotic material when introduced in Formula 1 but now found in many road engines as part of the quest for low friction and improved fuel consumption.

## HOWEVER, THE INTRODUCTION OF THE HYBRID TURBO ENGINES TO F1 IN 2014 HIGHLIGHTED THE FRAILTY OF EVEN THESE HIGH-PERFORMANCE MATERIALS

Ultimately it became logical to switch to steel although the minimum regulated piston weight of 300 grams became something of a challenge. The change of material helped in many ways. The peak stresses in a piston, which occur in the centre of the crown and around the ring grooves, could be controlled such that they were below the fatigue limit, therefore giving the piston much longer life. The improved integrity of the ring grooves

is also important in controlling oil consumption, something which these days is regulated to eliminate some of the tricks that were being played a few years ago.

So while bodywork may be the visible change that gets the journalists and the fans talking, there's every bit as much leading-edge development going on under the skin. Unfortunately, it's much harder to find out about.



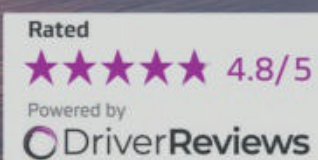


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# STRAIGHT TALK

MARK GALLAGHER

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Not for 'Didi' Mateschitz the crass egotism of Elon Musk or the publicity-obsessed antics of Richard Branson. Here was an intensely private individual who stood firmly behind his brand, not in front of it. When asked for high-profile interviews he simply declined.

In that Repsol meeting I gained an early insight into his modus operandi. If the Spanish oil giant could support Red Bull Racing, Red Bull would reciprocate. In rallying, touring cars or motorcycle racing. In short Red Bull – or rather Mateschitz – didn't need Repsol's money, but he did value partnerships.

On a subsequent visit to meet him at Hangar 7, where the jet taxied straight from Salzburg airport's runway to our meeting room in his Bond-like lair, he shared his backstory. We then went to meet Jürgen Rauch, whose family business was given the task of producing the first Red Bull in Europe, way back in 1987.

Then to see 90,000 cans of Red Bull machine-gunning off the end of each of four production lines every hour of every day for 50 weeks of the year, with a fortnight for maintenance. Back then sales were 2.4 billion cans per year and rising; by 2021 that figure had quadrupled.

In Formula 1 Red Bull's arrival as a team owner changed everything. Previously

a sponsor, first associated with Gerhard Berger, its acquisition of Jaguar Racing and then Minardi gave Mateschitz ownership of 20% of the grid and a degree of power few could rival.

His support for talented people and teams across the worlds of motorsport, aviation and extreme sports was no act of charity, though he deeply enjoyed those activities. He turned his passions into the marketing platform upon which his brand

was built, wooing young consumers the world over into sampling the product.

Who doesn't want to be cool, slim and filled with energy, just like a Red Bull can? His explanation to me of Red Bull's product design and marketing was simple, then simply brilliant in its execution.

Mateschitz was a change agent in business and in life, making it possible for many now-familiar names in F1 to achieve their dreams. His legacy is truly immense.

## MATESCHITZ: A TRUE FORCE FOR CHANGE

**When Dietrich Mateschitz arrived** in Milton Keynes to address the beleaguered staff of Ford's unloved Jaguar Racing team in November 2004, he wrote the opening chapter of a remarkable story. One in which the group of people who stood in front of him that morning would be transformed into world beaters.

Christian Horner was two months away from being made team principal, Adrian Newey would not be lured to the fold for another year, but Mateschitz knew precisely what he wanted.

I've often regretted not recording his speech. He gave the staff a vision of what they would become as Red Bull Racing, the values for which Red Bull stood, how his passion for F1 dated back to the time when, in his twenties, he followed the exploits of Austrian hero Jochen Rindt, and his personal ambition for the team.

The goal, he said, was to become a winner in Formula 1 within five years, and to one day win the world championship.

Just a few weeks later I climbed on board his



**Dietrich Mateschitz, through Red Bull's involvement in first sponsorship and then team ownership, leaves behind a huge legacy in Formula 1**

private jet for a trip to Madrid; the two of us were off to visit Repsol in the hope of securing their support. A third person joined us, Austrian journalist Gerhard Kuntschik undertaking a rare interview with the man who first created the global energy drinks industry, then dominated it.



## ONE OF A KIND

It's taken over half a decade of development but now the Mercedes-AMG One is here – boasting 1048bhp from a Formula 1-based hybrid powertrain. Can it claim to be the ultimate hypercar?

WORDS ROBERT HOLMES  
PICTURES MERCEDES AMG

**Much has changed since** October 2015, when AMG boss Tobias Moers first decreed that a Formula 1-engined road car would be the only properly fitting way to celebrate the AMG brand's 50 years in business. But while a prototype was ready for the Frankfurt Motor Show in the anniversary year – 2017 – further deadlines, not least the 2020 launch date, came and went as the hybrid supercar endured a thorny and protracted development phase.

In the interim, Moers, the Mercedes-AMG One's father and keenest advocate, has been headhunted by Aston Martin, where he lasted two years before being given the boot by Lawrence Stroll when the company's share price remained in the doldrums. Word is that the demanding and hard-to-please firebrand had rubbed a few too many people up the wrong way. Hardly surprising given the rumours of him storming out of a Mercedes board meeting when the C63 was downsized to four cylinders.

The completed and production-ready Mercedes-AMG One is as uncompromising as the man who proposed it. As you might expect of something which puts over 1000bhp under the

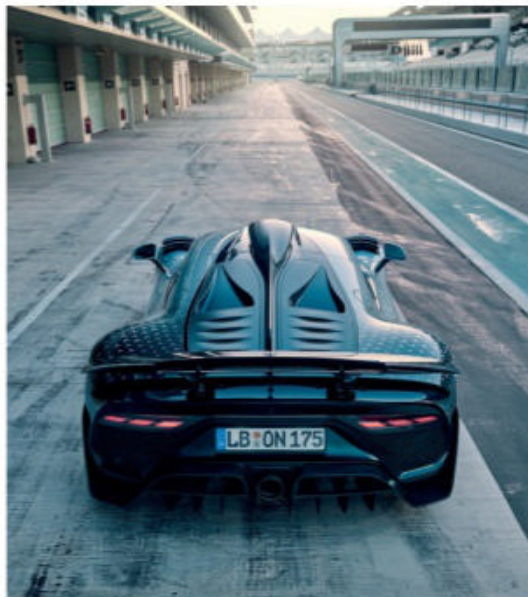
command of your right foot. Sculpting a slippery carbonfibre shell and loading it with active aerodynamics, dressing the two-seater cockpit in a manner which apes F1 cars without being so intrinsically uncomfortable – these were the easier elements on the task sheet. Making an F1 engine both road-legal and driveable by mere mortals were the key challenges facing Mercedes' engineers in Brixworth and Affalterbach.

"The performance data of the Mercedes-AMG One are ultimately only a small excerpt of what technology is in this vehicle," says Jochen Hermann, technical managing director of Mercedes-AMG. "Apart from an F1 powertrain that generates 1048bhp from a relatively small, highly efficient internal combustion engine in combination with four electric motors, the monumental task was above all the exhaust gas aftertreatment. The Mercedes-AMG and Mercedes-AMG High Performance Powertrains teams have really done a great job here.

"This project was partly a curse and a blessing at the same time. But we've walked the stony path, and as a technician you naturally get carried away with all the details. From the materials used, the exceptional chassis components to the aerodynamic refinements – in terms of complexity, the Mercedes-AMG One is hard to beat. In a Formula 1 car, a team of engineers with laptops makes sure that the powertrain starts. With our hypercar, all it takes is the push of a button. This also illustrates the immense

software know-how that's gone into this vehicle."

Aston Martin's collaboration with Red Bull, the Valkyrie, faced a similarly tortuous journey to production as its engineers – led by an increasingly frustrated Adrian Newey – wrestled with the compromises inherent in making an ultra-high-performance car road legal. There are many technical parallels between Mercedes-AMG One and the Valkyrie: at its heart is an F1-style carbonfibre monocoque and the rear suspension mounts directly to the gearbox and limited-slip differential, which act as stressed members of the chassis as they do in an F1 car. The gearbox,



PICTURES: MERCEDES





Five years after the prototype appeared at the Frankfurt Motor Show, the AMG One has finally become a reality





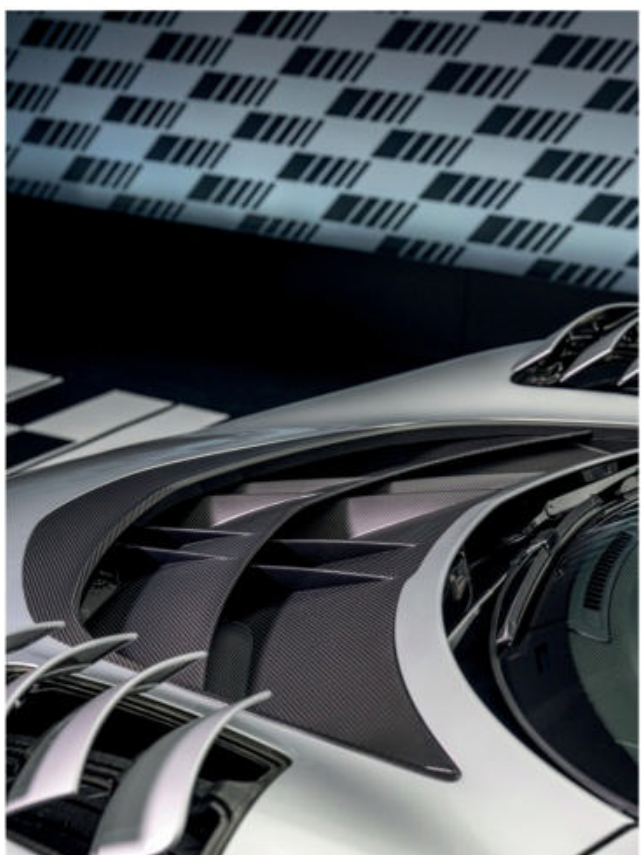




though, isn't the same as you'll find in the back of the Mercedes W13 and its antecedents; it's a bespoke seven-speed unit designed with the real world in mind, in as much as a gearbox can be when transmitting over 1000bhp through a carbonfibre four-disc clutch.

Up front the suspension mounts to an aluminium subframe. The five-link setup features horizontally packaged, pushrod-actuated coil-over dampers, also like a race car, requiring no additional anti-roll bar to control lateral movements. An adaptive damping system linked to the broader drive mode system and active aerodynamics can lower the whole car (37mm at the front, 30mm at the rear) in the more aggressive modes, or lift it to enable the driver to negotiate car parks and speed bumps.

Externally the One has changed little from the



## EXTERNALLY THE ONE HAS CHANGED LITTLE FROM THE CONCEPT PRESENTED BACK IN 2017, ALTHOUGH IT NOW BRISTLES WITH ACTIVE AERODYNAMIC SYSTEMS

concept presented back in 2017, although it now bristles with active aerodynamic systems, many of which serve the double purpose of optimising downforce levels while servicing the engine's prodigious cooling demands. While the adjustable splitter and rear wing are nothing new – either to this car or the hypercar genre – the active louvres around the front wheelarches are claimed to boost downforce by increasing negative pressure within the wheel wells. At high speeds they can be closed to reduce drag – if you select the 'Race DRS' mode which also retracts the rear wing.

The wheels – you have a choice of two designs – also feature carbonfibre aerodynamic devices which serve multiple functions. Mercedes claims they improve overall aero performance while specifically acting to ventilate the wheelarches and cool the brakes. As a consequence of that, Merc has been able to spec a relatively lightweight braking system featuring six-piston calipers up front and four-piston units at the rear, acting on carbon-ceramic discs.

Where the One and the Valkyrie radically diverge is their weights. The Valkyrie is claimed to tip the scales at around 1100kg but Aston hasn't released the industry-standard DIN figure (which includes fluids and a 90% fuel load). The One's quoted DIN weight is 1695kg. That's a substantial difference even if not quite like-for-like.


As in F1, it's the hybrid powertrain which is responsible for much of the bulk. The complexity and sophistication is staggering. Two electric motors up front power the front wheels independently (when you first fire the car up, it does so in all-electric mode until the catalytic converters have completed a pre-heating phase), provide for power recuperation as well as deployment, and allow for torque vectoring.

These account for 321 of the One's available horses. The energy storage system is based on the one proved out in F1: a high-power-density lithium-ion battery with a direct-cooling system in which each cell has its own individual 'jacket'.

Also like current F1 machinery, the 1599cc turbocharged direct-injection petrol V6 is augmented by an MGU-H (Motor Generator Unit – Heat), which minimises turbo 'lag' and contributes 121bhp, and an MGU-K (Motor Generator Unit – Kinetic) mounted on the block which can drive or be driven by the crankshaft, depending on the deployment/recovery mode. It has a peak output of 160bhp. The internal combustion engine is built at Mercedes-Benz High Performance Powertrains in Brixworth and, while it isn't identical to the power units which have been powering the F1 team's cars since 2014, it's close enough. Where it differs in detail, the purpose has been to enable it to run for more than a few hundred miles between rebuilds – and on regular lubricants and fuel. Maximum revs are 11,000rpm, 4,000 less than an F1 car's limit, although fuel-flow restrictions mean very few F1 engines regularly hit that figure anyway. Peak power of 565bhp arrives at 9,000rpm.

Where the One's powerplant differs from its race-bred cousins is the presence of a legal necessity: a powerful silencer, a pair of particulate filters, four preheated metal catalytic converters and two ceramic catalytic converters which render it Euro 6 compliant.


Top speed is quoted as "beyond 350km/h [217mph]". If you select the 'Race Start' driving mode the One will hit 60mph in 2.9 seconds and 124mph in under six. To enjoy the staggering performance of this car you will need a stout heart, sensitive feet, and substantial net wealth. The price is €2.75million (we would normally convert this figure into pounds but, given recent developments, that might be too depressing).

It's understood the complete production run of 275 has already been sold. Owners include David Coulthard, Lewis Hamilton and actor Mark Wahlberg. Can we expect to see the One feature in a future instalment of the *Transformers* franchise? That might be more entertaining than some of the *YouTube* footage of nervous 'influencers' test driving it at the Nürburgring... 









# AIN'T NO STOPPING HIM NOW

**Max Verstappen's** march to title number two was slow to get into gear but soon became unstoppable. But was it as easy as the litany of late-season wins made it look, or did Max and Red Bull deliver a season-long masterclass at the wheel – and in the factory – to create an F1 juggernaut?

WORDS JUSTIN HYNES

PICTURES  AND RED BULL

## IN PARC FERMÉ IN SUZUKA,

where, after a rain-disrupted, chaotic race, the thick fog of points confusion gradually lifted to reveal that Max Verstappen had sealed the drivers' title, the Red Bull driver was collared by former champion Jenson Button and asked how his second championship compared with his first. Max's response was unequivocal.

"The second is even more beautiful," he smiled. "Just [because of] the season we've had, with the wins, the great races, the teamwork, the 1-2s..."

He could have gone on. At the time of writing ►



(post-Mexico) Verstappen has scored a record 14 wins, brushing aside the single-season total of 13 posted by Michael Schumacher in 2004 and Sebastian Vettel in 2013. He's racked up the biggest points haul for a single campaign in history – 416 with two rounds remaining – and outscored his only real non-Red Bull rival Charles Leclerc by a whopping 141 points.

The raw statistics of Verstappen's second world title paint a picture of an unstoppable juggernaut on a scorched-earth march to glory. The question, however, is whether this is the result of the irresistible force generated by the 25-year old, or a function of other factors – a regularly sharpened spearhead in the shape of an aggressively developed RB18 boosted by a dwindling challenge from a blunted Ferrari – playing into Max's gifted hands. The answer, as ever in sport, lies somewhere between the two.

Rewind to the start of the season and Red Bull entered the title fight as post-testing favourite. A low-key outing in Barcelona gave way to final-day updates in Bahrain and a burst of pace that left Verstappen almost seven tenths of a second clear of Leclerc, though he did benefit from stickier C5 tyres.

At the opening round in Bahrain, however, the positivity evaporated as fast as the fuel in Verstappen's RB18, as a vapour lock forced him to retire after 54 laps. Verstappen bounced back with a convincing win in Jeddah but when he stopped on track in Melbourne after 38 laps owing to an unrelated fuel issue, alarm bells began to sound. "This is not what you need when you want to fight for the championship," he lamented afterwards. "The gap is already pretty big – at this stage we need 45 races!"

Verstappen's verdict, flippantly made, wasn't without substance. Although 19 races remained, Verstappen left Melbourne 46 points adrift of Leclerc. Only once in the era of 25 points for a win had a similar deficit been overturned – when Sebastian Vettel came back from being 44 points behind Fernando Alonso in 2012.

**"WE STARTED THE YEAR WITH A VERY FAT CAR, IT WAS A BIT OVERWEIGHT"**  
MAX VERSTAPPEN

ability to extract the maximum from it.

"We started the year with a very fat car, it was a bit overweight," Verstappen said later in the season, at Monza. "It was in the wrong place in the car as well as overweight, so that's why it was just understeering

a lot more and prone to front locking."

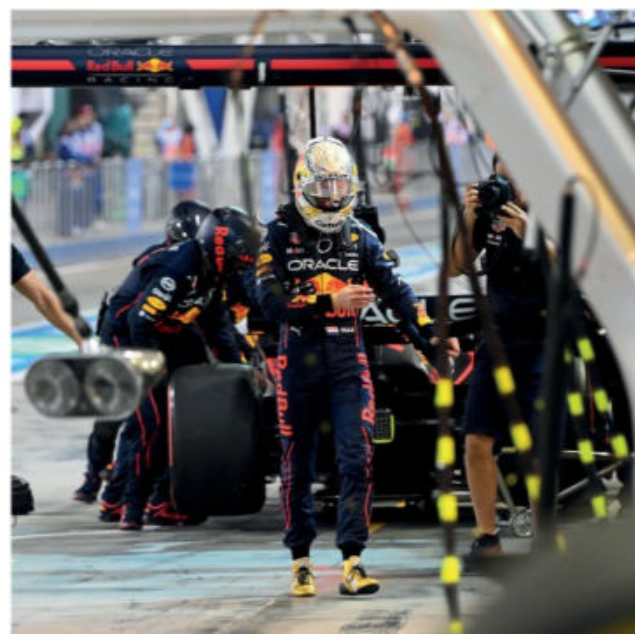
"A bit overweight" was an understatement. While most of the grid had failed to get close to the minimum weight of 798kg, the RB18 was one of the grid's lardiest machines, as much as 10kg over the limit. The bulk was reckoned to cost as much as 0.3s in lap time.

Reducing weight became a key concern and chief contributor to Verstappen's title charge. The first signs of development came at Round 4 in Imola where a number of lighter components were introduced along with revisions to the floor. For the first time Red Bull was able to switch on the RB18's tyres better than Ferrari and, more importantly, suffered less wear both in the first sprint race of the season and in the main event. Verstappen took his first pole of the season, won the sprint and the race, while Ferrari and Leclerc, losing ground to the swifter Red Bulls on fading rubber, gambled by switching to soft tyres. Chasing to reel in Verstappen and second-placed Sergio Pérez, Leclerc spun and finished sixth.

While Leclerc's error was an immediate blow, team boss Mattia Binotto admitted that in light of Red Bull's development capacity, the races to come might result in more debilitating injury. "We know that developing will be a key element of the season... We know that Red Bull will be very strong, they are coming back."

He wasn't wrong. Over the following races constant refinement brought the RB18 towards ▶

**Max's season didn't start well. After battling with Leclerc in Bahrain, retirement meant he had to walk back to the garage without the RB18...**



## Weight for it

The RB18's early mechanical woes weren't the only concern, however. His races might have ended in technical issues but Verstappen's headline-grabbing exits served to mask limitations elsewhere, particularly with regard to the weight of the RB18 and its effect on Max's



Eventually, after major confusion at the end of the Japanese GP at Suzuka, Verstappen was crowned champion for the second time







After Leclerc's huge error in France, Max stuck the knife in at the very next race in Hungary by winning from 10th on the grid

Verstappen followed Hungary with an even better comeback in Belgium when he triumphed after starting the race in 14th





In Japan, as during most of the season, Leclerc gave his best in a battle with Verstappen, but once again Max would come out on top



Verstappen, allowing him to fully exploit a suite of improvements, from an obvious increase in speed through the weight reduction, to the ability to move ballast around in pursuit of better balance and to help dial out an initially weak front end. Add in reduced tyre wear as the weight came off (5kg by the Canadian GP according to Helmut Marko) and

Verstappen – known to favour a sharp front end that provides confidence on turn-in, leaving his supreme car control to sort out any rear-end laziness – went from fighting a rearguard action on several fronts to leading overwhelming assaults.

“At the beginning of the season, we didn’t have the possibility to move the weight, and it was part of the setup,” confirms Red Bull technical director Pierre Wache. “But it’s everything together and after you find your performance somewhere, and it’s a little bit more tricky to set up the car, then it went in favour of Max.”

## Swing when you’re winning

The swing towards Verstappen gave him all the tools he needed to unleash a relentless charge. From being 46 points adrift of Leclerc after the race in Melbourne, Verstappen battered his way to a 46-point advantage after the Canadian Grand Prix, collecting 150 points in six races compared with Leclerc’s 99. And though Ferrari staged a mini-revival with Sainz winning at Silverstone and Leclerc supreme in Austria, Max delivered a hammer blow in France with a dominant win as

**“I KNEW IT WAS GOING TO BE QUITE CLOSE, BUT I WAS LIKE, ‘THIS IS A GAP WE CANNOT GIVE AWAY ANYMORE’”**  
**MAX VERSTAPPEN**

Leclerc spun off. The gap to Leclerc expanded to 63 points and Max began to believe the title was his.

“There were a few moments where I thought, ‘We have a good chance of winning it,’” he says “But I think the moment where I thought, ‘Now we’re going to win it’ was after Paul Ricard, where the lead increased by quite a bit. We had a

quite competitive car, I knew it was going to be quite close, but I was like, ‘This is a gap we cannot give away anymore.’”

He was as good as his word. On the run to taking an unassailable lead in Japan Verstappen lost just once, in Singapore, and then to his team-mate. Red Bull’s ability to successfully put the RB18 on an extreme diet undoubtedly aided Verstappen’s charge but was development the whole story? Team-mate Sergio Pérez, the only other driver with first-hand knowledge of the merits of the RB18, is the first to disagree.

“I’ve said it before: I don’t feel like Red Bull have had a dominant car, so to have won the championship the way Max won it, I think he definitely found a gear or two more compared with anyone else,” says Pérez. “I think in the beginning I was a lot closer to him but once he got comfortable with the car and I was more uncomfortable with it, he was driving at another level compared with everyone else. The races he did were sometimes incredible to watch.

“He clearly has stepped up. He really delivers from FP1 all the way to the last lap of Sunday, at a very high level. He hardly makes mistakes. And I think it’s something that is very hard to get and to be able to drive at your 100% without making mistakes is the thing that makes him so special at the moment.”

## A tempered temperament

For Helmut Marko, Verstappen’s 2022 improvements have chiefly come in two areas – temperament, and even greater pace. “He’s far more relaxed. He’s a much more mature driver,” he says. “Max now drives faster with less risk and also with less wear to the equipment. In the past, if something didn’t work out on Friday, he was close to freaking out. He sees it very differently now. We would be working hard for the race, which bothered Max a lot a year or two ago. ▶

By the time of the Italian GP a second title seemed inevitable and Max confirmed this by winning from a grid slot of seventh





He just always wanted to be P1. But what is most important, of course, is victory. Now, if you know it's possible, you can live with second or third on the grid."

The Red Bull motorsport advisor also picks out two moments from the season to illustrate his point, the first coming in Suzuka. "The way he has reeled off his races this year was really impressive and the way he overtook Leclerc on the outside after the start in Suzuka was out of this world," Marko says.

The second was Verstappen's reaction to the slow pitstop during the US Grand Prix which dropped him out of the lead. "He's so special," says Marko. "After this pitstop, going so on the limit, but not ruining his tyres, that shows how much more mature he is between this year and last year. That is why we believe it's not the end of what we've seen from Max. There is still something to come."

**"THIS YEAR, EVEN IN ADVERSITY, HE'S DEMONSTRATED UNBELIEVABLE LEVELS OF SKILL AND CONFIDENCE. I'VE SEEN A MORE MATURE MAX, DRIVING BETTER THAN I'VE EVER SEEN HIM DRIVE"**

**PAUL MONAGHAN**

Verstappen's initial reaction to the 11.3s stop in Austin was to spit a furious "beautiful, fucking beautiful" over the radio to his pitwall but, after recovering to win, his post-race contrition was clear. "Of course we had that stop. I was a bit upset but I just kept pushing," he told his team.

The ability to dismiss setbacks and quickly move on is a marked change from the Verstappen of even a year ago, as Red Bull chief engineer Paul Monaghan attests.

"I've seen a more assured Max," he says. "You know, disappointments like Bahrain and Australia didn't derail him. He'd come to you and you'd say, 'well, this has happened or that happened and we'll sort it out,' and you'd see a calmness in him that wasn't always there in the past. This year, even in adversity, he's demonstrated unbelievable levels of skill and confidence."

So I've seen a more mature Max, driving better than I've ever seen him drive."

For Verstappen, the shift is purely down to time and experience. "You know you can't change [setbacks] anyway so you have to try and find a solution to try and get ahead or to try and improve the situation. I think it's something you only learn over time, and with experience as well."

Always dismissive of sudden, superhuman leaps in capability, Verstappen doesn't believe his driving has taken a significant step forward.

"I find that difficult," he says. "I think you always look back at a year [and ask], 'What can I do better?' You always try to be a more complete driver. But you're not a robot, you make mistakes, everyone makes mistakes. It's all about trying to minimise that and just minimise risk."

"I don't necessarily think I became a faster driver, because I don't think at this stage of your career you suddenly find a tenth or two-tenths in your driving."

"It's all about learning from previous seasons and just trying to apply that. And sometimes, in some situations that can make you a little bit faster because you know a little bit better what to do. Can be the car, can be the tyres, just track experience." ▶



PICTURE: RED BULL CONTENT POOL



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PICTURES: MARK SUTTON; RED BULL CONTENT POOL

## The Maranello horror show

A more assured, confident and pacier Verstappen at the wheel of a vastly improved car resulted in episodes of jaw-dropping dominance. Pérez points to his team-mate being “on another planet” and “untouchable” during a stunning weekend in Belgium, while Leclerc called the Dutchman’s Zandvoort qualifying pace “scary”. But where there is dominance there is also submission and, after setting the early pace with the F1-75, Ferrari’s title challenge suffered death, if not by a thousand cuts, then certainly by a trio of debilitating lacerations, as reliability woes, operational calamities and driver error robbed the team of major points-scoring opportunities.

In Spain and Azerbaijan Leclerc’s engine failed while he was leading and he was forced to take a grid penalty in Canada that further hampered his progress. Carlos Sainz, too, suffered a spectacular PU failure in Austria. Strategic blunders in Monaco (a botched stacked stop for intractable hard tyres), Britain (leaving Leclerc a sitting duck on hard tyres for a Safety Car restart) and in Hungary (again inexplicably opting for unworkable hard tyres as Verstappen bore down on the lead from 10th on the grid) severely compromised Leclerc’s title chances. Charles too contributed with the spin in Imola and through crashing out of the lead in France.

However, for Ferrari’s racing director Laurent Mekies, the team’s dwindling challenge was a

**In Mexico, with the constructors’ title already won, Verstappen claimed his 14th victory of the season, surpassing the previous record of 13**

function of simply not being quick enough on Sundays against an ever-improving Red Bull.

“It’s no secret that on race pace, we’re not as good as in quali,” he says. “Sometimes it’s down to higher tyre degradation compared with our competitors but sometimes it is simply pace. And I think of the example of Austin, [where] Charles pushed hard to stay with the quicker cars, to pass Checo, to fight with Max. And it had a price, because the truth is we were simply not as fast as them, again. So for us, it’s about trying to work on all the small details to gain some race pace. But it’s not something you improve in one day.”

It’s clear, then, that while Verstappen’s

**“I WANT TO TRY AND WIN MORE TITLES. AS LONG AS WE CAN KEEP EVERYONE TOGETHER I THINK WE’RE CAPABLE OF EVEN MORE GREAT SEASONS”** MAX VERSTAPPEN



**Mission accomplished: Max gets a quiet moment with girlfriend Kelly Piquet at Suzuka to reflect on a second consecutive world championship**

record-breaking title win would undoubtedly have foundered without the pitch-perfect performances of races such as Imola or Spa, the theme of his second victory march was as much about the harmonious convergence of competitive clean-sheet design, relentless and spectacularly effective development and trackside superiority as it was about the bravura solo of Verstappen’s driving. And after such a complete campaign there’s no reason to doubt the song will remain the same in the coming years.

“I still have a few more years in F1,” Max says. “I want to win more races. I want to try and win more titles. With everyone within the team, everyone who is involved with us, they deserve even more than what we are showing at the moment. As long as we can keep them all together I think we’re capable of even more great seasons.”





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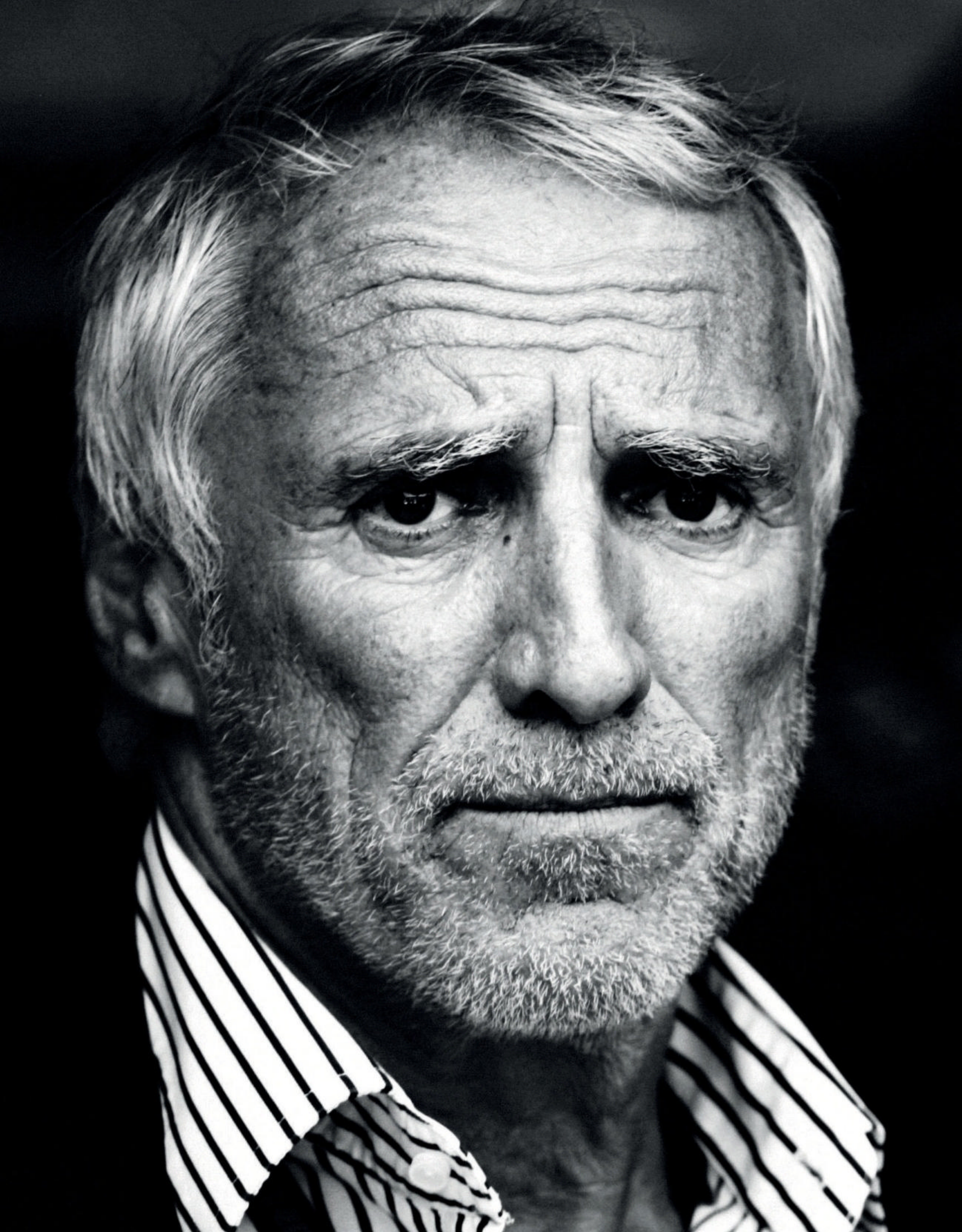


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# “THE MOST IMPORTANT THING... IS TO BE AUTHENTIC”

The death of **Dietrich Mateschitz** has not only deprived Red Bull of its visionary founder, it has shorn Formula 1 of one of its greatest, most influential benefactors. His Red Bull Racing team unapologetically gatecrashed the paddock back in 2005 and set about bending the sport's image to its will. But Mateschitz himself was famously media-shy, preferring to let the brand do the talking on his behalf. And, while it's now ordinary to speak of Red Bull F1 domination, of titles won and champions made, Mateschitz never assumed it would be easy or even possible – as **Anthony Rowlinson** discovered during this previously unpublished interview from 2006...

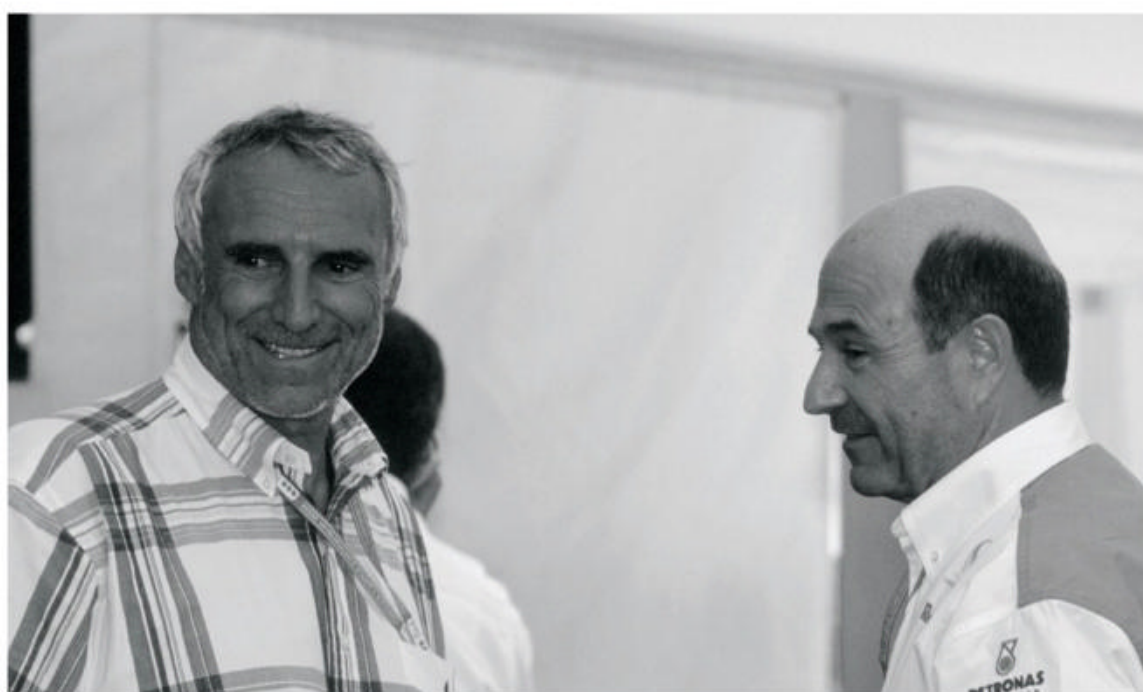
PICTURES  **motorsport**  
IMAGES AND RED BULL

For about two seconds I hold Dietrich Mateschitz's wallet in my hands. It has fallen out of his motorcycle helmet, which I've moved from a leather armchair in order to be able to sit more comfortably opposite 'Mr Red Bull'. I resist the temptation to pop the clip and look inside. It's slim, black, light and confers upon the holder an immense feeling of power. With this wallet, and access to the resources it represents, Formula 1 teams, football franchises, stunt planes, rocket-men, sky-divers, base-jumpers, white-water rafters, kite-surfers, snowboarders, downhill skiers... can be bought. Creations such as the Hangar-7 aircraft museum/art gallery/luxury restaurant in which we're sitting, can

be plucked from the ether of imagination and given form, made real, in a symphony of metal and glass. Futures can be moulded; different ways of being, envisioned; lifestyles drawn up from a fantastical wish-list to be perfected into a near-Utopian ideal. And the name 'Red Bull' can be writ ever larger across the globe.

The achievement of these goals is why the company is involved in F1, of course. From its early forays 12 years ago as sponsor of, then shareholder in, the Sauber team, to its acquisition at the end of 2004 of the ailing Jaguar Racing, Red Bull – Mateschitz – has always understood the appeal of the global sexed-up soap opera-on-wheels to a mass ▶





**Early days in Formula 1 with Peter Sauber. At one point Red Bull, through Mateschitz, was the majority owner of Sauber and main sponsor of the Swiss team**

audience. More crucially, it also ‘got’ how the key qualities of the Red Bull brand shrink-wrap perfectly around those of F1 (a ‘global extreme sport’, as Mateschitz’s one-time right-hand man Dany Bahar put it): speed, quality, youth, glamour, danger, sex, money. Something a little bit different; not an everyman’s pursuit, understood by all, but one revered with obsessive passion by those who do.

It’s a vision dedicated to, and predicated on, the cult of the can. One can – but billions of its kind sold globally each year. One drink within that can: the sweet, charged, ‘life elixir’ that devotees believe enhances everything from their sex life to their Saturday night out. One proposition: Red Bull Gives You Wings. Without The Can and its associated values, there is nothing. No F1 teams. No Hangar-7. No Dietrich Mateschitz – at least not in the form he has become known: an internationally recognised, though still mysterious figure, responsible for probably the single most successful, most sustained sports-marketing campaign the world has ever seen.

It promotes an almost-fantasy world populated by impossibly glamorous people; speed-addicted, fast-living, monied... Sound familiar? The wonder isn’t that Red Bull got into bed with F1; only that consummation wasn’t quicker.

Mateschitz rarely talks in public about his beloved company, nor the marketing philosophies that brought it to F1 and which

underpin its broader success. But when he does grant an interview, the ‘international man of mystery’ image (perhaps cultivated, perhaps because he’s a little shy) falls away fast. He’s far more approachable than any multi-billionaire need be and is warm, friendly, direct. No austere corporate terminator, he is possessed, instead, of a curiously gentle manner –

soft-spoken, even bashful. It’s an unexpected combination in a 62-year-old who has achieved phenomenal business success (net wealth \$7bn – which makes him roughly twice as rich as ►



**Mateschitz, with long-time Red Bull advisor Helmut Marko, casts his eye over Sebastian Vettel during pre-season testing in 2012**





The famous Hangar-7 museum in Salzburg. Historical aircraft and helicopters were another of Mateschitz's passions









**Abu Dhabi 2010: Christian Horner (left) and Adrian Newey (right) join Mateschitz in celebrating Vettel's and Red Bull's first world title**

Bernie Ecclestone), and it instantly puts those around him at ease: no bone-crushing, master-of-the-universe handshake so often the preserve of the alpha-plus male; no stentorian boom trumpeting an ego-driven masterplan. Mateschitz could be your big-framed matey uncle; equally at ease in the rough-and-tumble of a back yard kick-around as he is plotting the global domination of his business empire. Dressed in an easy, Euro-casual style (jeans, primrose-yellow polo shirt, slip-on loafers, sock-free ankles) he is not an intimidating man, despite physical heft and a charismatic presence. Staff talk to him, unbowed. He engages in small talk. He is, above all, disarming, un-prickly.

His weathered-well-tended features crease into a smile as he talks about his life's work and concedes Red Bull and F1 were surely destined for liaison: "I would say it's a pretty perfect fit between them, yes." The voice is deep and accented, but fluent and articulate. This is a man who knows his own mind: "Motorsport generally fits with what we're trying to do with Red Bull, which is why you see us in NASCAR, MotoGP, WRC and many other branches of motorsport. But F1, sure, is the pinnacle of that."

He's remarkably frank, too, about the rationale that underpins Red Bull's F1 involvement. The sport is, he admits, a brilliant marketing tool and as a career marketer, Mateschitz couldn't resist its allure: "Right from the start we could see that Formula 1 was a good marketing platform," he says, "one of the very best, in fact. It had the best image and whatever sort of analysis we did – qualitative, quantitative, any type – whenever we assessed it, we could see what it might be able to offer."

long before a more suitable potential acquisition came along: Ford-owned Jaguar Racing. A little over 18 months later, Minardi boss Paul Stoddart was also wooed by Mateschitz's charms (and chequebook) and sold his minnow team into a brighter future, as Scuderia Toro Rosso.

For a time, in 2005, Red Bull owned 20 per cent of the Formula 1 grid: not bad for a venture regarded by much of the older guard as arriviste and brash. But those who knew anything of the company and its methods wouldn't have been surprised. The playbook was written after Mateschitz's epiphany, more than 20 years ago, that a ubiquitous soft drink being sold in Thailand called Krating Daeng (Red Water Buffalo) could, with a little tweaking for European palates, sell and sell and sell. With Red Bull F1, as with the marketing of the original drink, the strategy was identical: identify product; move fast; push product as hard as you can. If that meant, in the F1 example, buying a couple of teams to enhance the chances of shifting cans to a youthful, trend-savvy audience, then simply: "Let's do it."

The 'shoot first, ask questions later' business model offends those purists who argue that only teams forged through a decades-long apprenticeship have any business in F1. Red Bull counters that without its buy-in Jaguar, Minardi and perhaps 1,000 uniquely skilled staff would no longer be in Formula 1.

"When we started with Red Bull Racing," Mateschitz reflects, "a lot of people said it was just a marketing exercise and that we wouldn't be professional about our racing or weren't serious enough. I believe that they have changed their mind. What we did in the first two years, on track and off the track, means you





cannot say any more that we are just a marketing team.”

There’s passion in Mateschitz’s words. Something of the molten core that must bubble away constantly to drive Red Bull’s ever-stronger ambition seeps through in his vigorous hand gestures and animated expressions. It colours his tone of voice when he articulates a vision for success: “We have invested in Red Bull Racing’s windtunnel, to make it state-of-the art. We have invested in the facilities; we have almost doubled the number of employees and we have gone out to get the best of what is available, whether that is Adrian Newey to design the car or Ferrari and Renault engines to power it. Everybody realises that it’s more than just marketing to do this and now we want to be in a position to be taking podiums and competing on merit.”

What Red Bull won’t deny is that its approach could scarcely be more different from the original intentions of, say, Ferrari. For Old Man Enzo, racing was the reason for existing. Ferrari was racing was Ferrari. Sure, he’d craft a few beautiful, desirable road cars to help fund the racing programme, but

racing, pure and simple, was always Ferrari’s *sine qua non*.

But love or loathe the self-sketched Red Bull Universe, Mateschitz is no dilettante: this clear-thinking, hard-headed business icon achieved considerable career success in his pre-Red Bull life, rising to become international marketing manager for the Blendax cosmetics company. And he hasn’t committed \$300m per season to Red Bull Racing, simply to earn a paddock pass. “We have to win,” he says, before pausing and marginally down-scaling his aspirations, possibly mindful of the challenge involved in beating such crack racing legions as Ferrari, Renault and McLaren-Mercedes: “At the very least we have to compete at the front. When you are an energy drink and it’s an energy drink that ‘gives you wings’, you have to be competing with winners. Actually you maybe don’t have to win, as long as you lose in the right way. There are some ‘losers’ who are the race heroes and it is an essential part of sport to lose as well as win. But if we lose for too long, then people will ask questions. They will be shouting from the back of the grandstands: ‘Get us another energy drink!’” Mateschitz laughs with an expression that’s humour laced with ten per cent fear, ten per cent horror at the notion of “another energy drink” usurping his own. “Our expectations,” he emphasises, “are extremely high.” And above all else, they must be met on Red Bull’s own terms – achieved through adherence to

**The Red Bull team paid tribute to ‘Didi’ in Austin after news of his death. The other Red Bull-owned team, AlphaTauri, did likewise**





## MATESCHITZ: THE LOST INTERVIEW



Enjoying success with Vettel at Toro Rosso in 2008 (above) and Verstappen at Red Bull (right)

the company's particular values – in order to sustain the cult of the can. It's here, you sense, that the essence of Red Bull's adventure lies. It wants to be known for what it is: fast, loud, brash, maybe, but never, ever, invisible or anonymous. In the F1 world, how could it be, with two teams, the mighty team/party-central twin-motorhome Energy Station; the Formula Una models who attend every race; the Red Bulletin paddock newspaper? Mateschitz resists suggestions that in putting a smile back on F1's face, Red Bull has provided the antidote to creeping public apathy towards the sport. If Red Bull has done anything, he argues, it has brought back some of the '70s values that made F1 a little less corporate, a little less PC, and a lot more focused on its superstars: "Formula 1 isn't BMW or Mercedes or Toyota. It's Nico Rosberg or Robert Kubica or Michael Schumacher, Fernando Alonso and their friends and what goes on around them. This is what Formula 1 is about: sport, fuel, noise and a social scene. Some of this has been forgotten, so maybe we have been able to remind it a little bit of what it should be and used to be."

Red Bull's world view has been unavoidable in F1 from the off – and that's precisely the point: "If you really look at Red




Bull's philosophy," Mateschitz reflects, "there's hard work, challenge, performance, but at the same time, leisure, a little bit of party and some social things. Really, most people share our philosophy. Some will never share it and maybe it's good like that. We don't need to appeal to everybody. It would be wrong even to try. You cannot be everybody's darling and even if you try, you will fail. The important thing is to be authentic and be like you are. The people who like you as you are will be your friends, and the people who don't... well, that's their problem. We hope, at least, that the people who don't like us in F1 will still come and have a drink in our Energy Station."

A can of Red Bull, presumably. 



# KEEP FEELING OSCILLATION



Faced with drivers complaining about the long-term health effects of car 'bouncing', the FIA has stepped in to deal with it. But how does the so-called 'Aerodynamic Oscillation Metric' work, and is it fit for purpose?

WORDS JAKE BOXALL-LEGG

## ASIDE FROM THE AESTHETICS, THE BIGGEST VISUAL DIFFERENCE

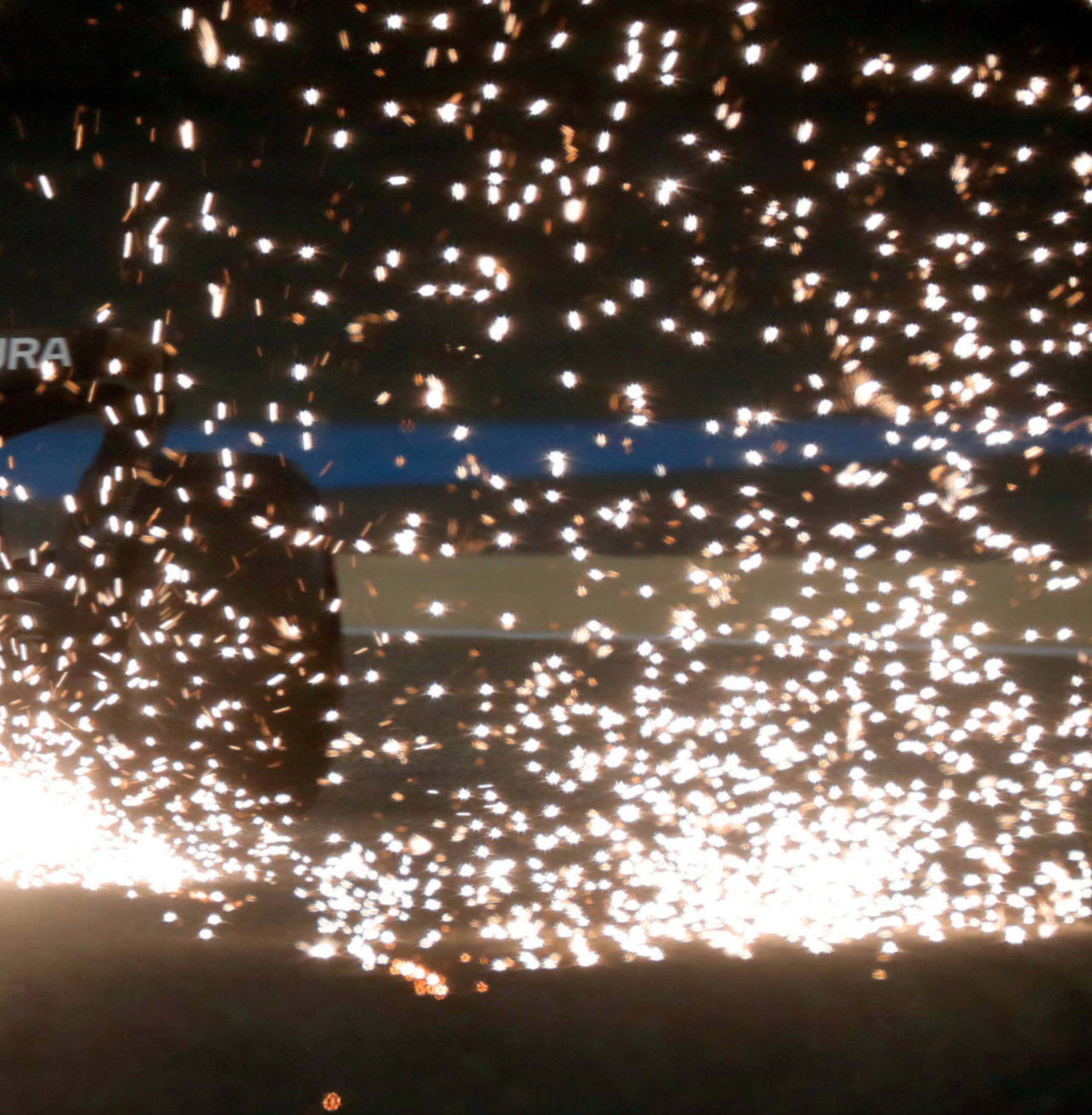
between the older generation of Formula 1 car and the new-for-2022 concoctions was in their vertical movement. Bouncing and porpoising are nothing new in the world of motorsport as a whole but, having mandated flat undertrays since 1983, Formula 1 had spent the preceding four decades in its own bubble – one where porpoising barely figured.

Its appearance and effects therefore blindsided the teams at pre-season testing, where the cars were oscillating so fiercely that their skid blocks were rattling against the track surface and transmitting the impact shock

straight to the drivers' bodies. The teams simply hadn't seen it coming: not only had a whole generation of engineers grown up in F1 without experiencing the phenomenon, testing restrictions prevented them foreseeing it. Windtunnels are currently capped at simulating speeds of 180km/h; Ferrari, to give one concrete example, has confirmed its car only begins to experience porpoising at 250km/h.

Hasty development work in the early season enabled the majority of teams to tune out the porpoising response caused by the aerodynamic sensitivity of the sub-floor venturi tunnels, either through ride-height changes or by manipulating the airflow underneath the car at certain speeds to eliminate flow patterns causing vertical movement.





Red Bull proved to be one of the first teams to get on top of it, while Mercedes notably struggled to tame its W13.

Bouncing is a different mechanism, but one still related to the switch to ground-effect aerodynamics this season. The underfloor tunnels require a stable platform to produce consistent downforce; using high spring rates in the suspension ensures the ride height of the car doesn't change too much around the lap. But there's a price to pay for increasing the suspension stiffness. On bumpier circuits, when the unsprung masses (in this case, the wheel assembly) respond to a bump, the suspension yields much less

damping through the stiffer spring. That creates a coupling effect, where the sprung and unsprung parts of the car are interlinked and the energy is directed through the bottom of the tub. Hence in Baku Lewis Hamilton had to be helped out of his car because he was in so much pain.

Hamilton wasn't the only driver to voice his concerns about the long-term health effects of this car behaviour and the FIA duly announced, ahead of the Canadian Grand Prix, an intent to introduce an "aerodynamic oscillation metric" on safety grounds – thus sidestepping the usual requirement for unanimous agreement from all teams. This metric would ►



be based on the vertical acceleration of the cars, where any continuous cycles could be measured by a sensor and then assessed by the FIA to determine if a car was bouncing excessively.

This process employs an FIA-standard accelerometer already fitted to each car and hooked up to the mandatory accident data recorder. Using the data already gathered from the previous rounds, the FIA set the base metric at 10J/kg/100km as a limit, with wiggle room for each round depending on the circuit. Every car would have its mean AOM calculated from each “eligible” lap of running – which excluded in, out and Safety Car laps where it isn’t reaching peak performance.

The limit is calculated as a function of the circuit length, the sample time of the accelerometer signal, and the calculated readings themselves, to yield a reading for each car. Any situation where a car exceeds that 10J/kg/100km limit by 20 percent means that the team can play one of three jokers, as part of an FIA leniency initiative to allow the teams to get their cars into shape. Beyond that, and the FIA has authority to disqualify the driver of that car from the results.

This was not universally popular, particularly among the teams who had either fixed their own problems or weren’t suffering from discernible bouncing issues in the first place. Red Bull team principal Christian Horner was among the more vocal detractors of the AOM, standing against the proposal on the grounds that it was a gateway to intrusions on teams’ technical sovereignty.

“When you look at it from a purist’s point of view, it’s not ideal, because it seems that we’re giving more and more influence to the FIA to dictate what your setup is,” Horner grumbled. “At what point do they say you have to run this rear wing, or a certain ride height? It’s a dangerous avenue to go down.”

Horner later made his opposition to the notion of a bouncing metric more pointed, stating that “there’s an awful lot of lobbying to change the regulations significantly for next year so a certain team can run its car lower and benefit from that concept.”

But even Mercedes, arguably the team that stood to benefit the most from the AOM – and was no doubt the “certain team” to which Horner was referring – wasn’t particularly enamoured with the FIA inserting itself into the debate. As a result, following a stormy meeting with the various stakeholders at the Red Bull Ring in July, the governing body kicked the can further down the road. Delaying the AOM’s introduction until the Belgian Grand Prix, said the FIA, would give time for the teams to make alterations to their floor and skid block designs, partly since some teams



**Even though Mercedes potentially stood to gain most from the AOM, the team wasn’t overly enamoured by the FIA getting involved**

had created modular skid blocks to retract and limit the measurable wear. Plank checks hence became more stringent to ensure nobody continued to shift any wear to other areas of the underbody.

What started as a measure to safeguard driver welfare has therefore become embroiled in the politics of relative performance. Mid-season changes naturally affect some teams more than others, and in ways which are often difficult to understand immediately. There was a rebellion from a handful of teams, supposedly led by Ferrari and Red Bull, over several of the proposed changes that would roll into 2023. This included a 15mm rise

in all floor edges and a rise in the throat height of the diffuser, which would mean that any developments produced throughout 2022 would effectively be voided by the change in dimensions. These changes have since been approved by the World Motor Sport Council.

McLaren wasn’t among the dissenters. Its technical director, James Key, points out that the teams can’t be trusted to make the required changes themselves to lessen porpoising and bouncing, particularly if issues crop up again in subsequent seasons.

“If you imagine you’re the FIA, and you do nothing,” he says, “and it’s still there in ’23 after turning things around and producing new cars based on a lot more knowledge than we had for ’22...

“It’s very difficult to simulate and predict porpoising. We kind of recognise there’s ways of getting

**“IT’S VERY DIFFICULT TO SIMULATE AND PREDICT PORPOISING. WE KIND OF RECOGNISE THERE’S WAYS OF GETTING RID OF IT. BUT IT CAN COME BACK AGAIN QUICKLY”**

**JAMES KEY, McLAREN**

rid of it. But it can come back again quickly if you have certain types of development, or increase your downforce. So rather than take that risk, from the FIA’s point of view, it makes sense to try and remove the issue entirely, but also show that we’re taking it seriously and doing something about it after the concerns raised by some of the drivers.

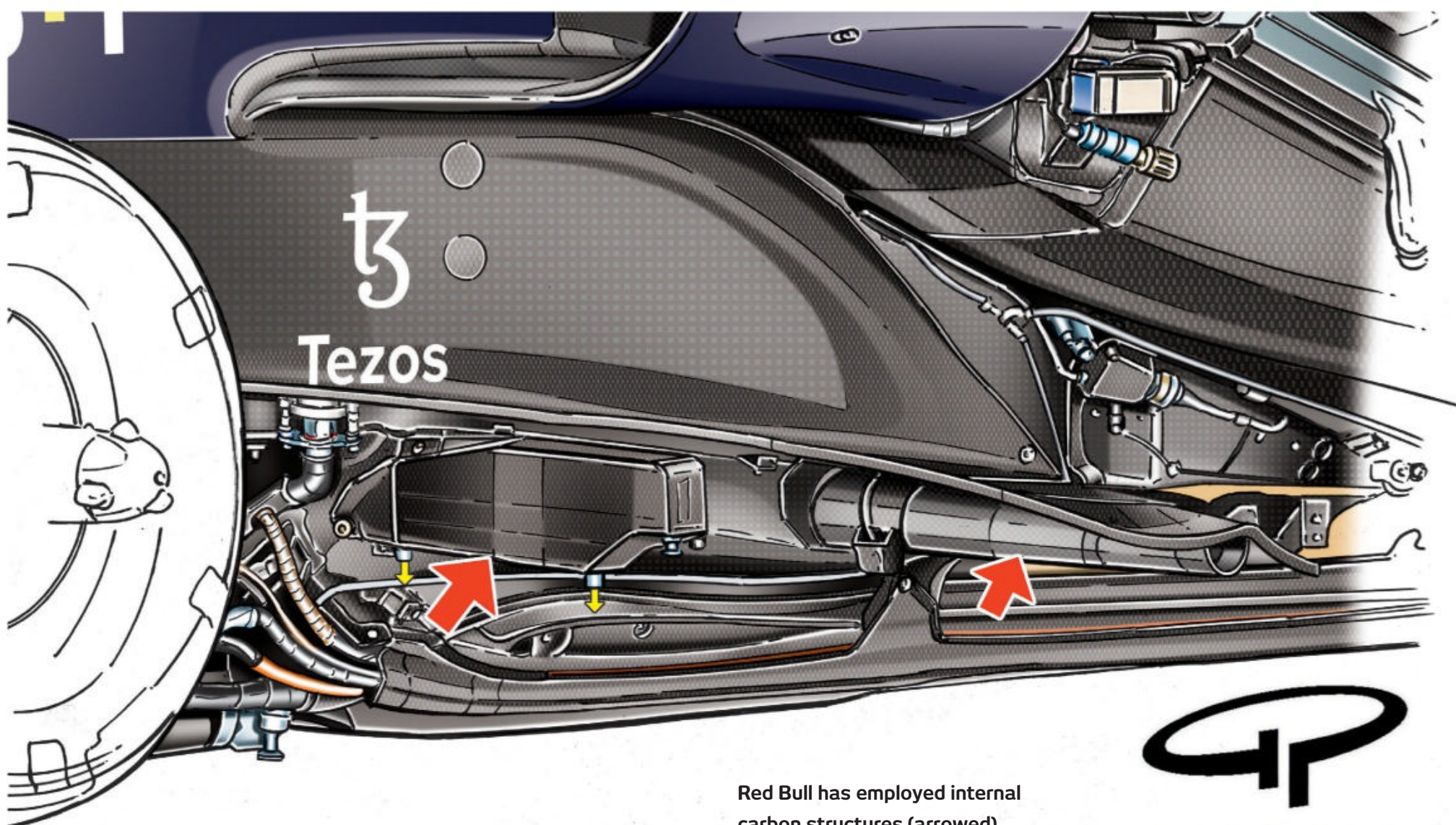
“You can’t just assume that teams are going to do it.”

Ultimately, despite Red Bull’s trenchant opposition to the changes, the addition of the metric seems to have favoured that team’s package. Following the implementation of the AOM Red Bull’s margin of superiority



**Red Bull has been most vocal about the introduction of the AOM, arguing that the FIA should not be dictating car setup**





Red Bull has employed internal carbon structures (arrowed) to stiffen the floor and reduce flex on the RB18



Ferrari's F1-75 was one of the cars most affected by porpoising in the earlier parts of the season

over Ferrari seemed to grow, and Max Verstappen embarked on a winning streak which netted the drivers' title with four rounds remaining. Meanwhile Ferrari's development stalled or even went into reverse as the team rowed back on certain new aerodynamic components.

Part of this is down to performance characteristics already present in the cars. The RB18 clearly has greater downforce efficiency since it's been able to cope with running at slightly higher ride heights when the occasion calls for it. Ferrari's F1-75 was one of the cars more predisposed to porpoising at the start of the year and, although the team had largely ironed it out, the requirement to run more cautious setups has proved costly.

Where Ferrari was closest to a victory post-Belgium, when Sergio Pérez was being chased down by Charles Leclerc around Singapore's Marina Bay circuit, it coincided with a loosening in the oscillation metric for the bumpier circuits. Correlation doesn't necessarily equal causation here, however; the FIA had simply elected to eliminate any spikes over 7G

from the metric calculations to ensure that any kerb strikes weren't skewing the figures. The same rubric was applied at the US Grand Prix at Austin, where the track surface notoriously becomes more bumpy every year.

In fact, it's hard to discern the actual effect of the bouncing metric on the pecking order. In the case of the floor cuts implemented for the 2021 season, the teams who felt hard done by weren't shy about airing their grievances – but there have been few such complaints about the AOM. Mercedes still appears no closer to the front two teams and, although the likes of Haas and Alfa Romeo have regressed as Aston Martin has improved, that can reasonably be attributed to the overall development cycle.

Perhaps those complaints are lying in wait for the end of the season, or for the 2023 changes that will undoubtedly take up valuable windtunnel and simulation time to get right. But the bouncing storm that dominated the news agenda in the early stages of this season appears to have abated for now – at least, until someone manages to surpass the FIA's carefully curated AOM.

If and when a team does that, and is thrown out of a race, expect all of the arguments to begin anew. 



# BOLT FROM THE BLEU

WORDS LUKE SMITH PICTURES



motorsport  
IMAGES

AND ALPINE

**Esteban Ocon** likes to point out he's the first driver since Lewis Hamilton to emerge from a spell as Fernando Alonso's team-mate with a superior overall points record. While some may disagree, Esteban reckons it's not just luck which has made him France's pre-eminent Formula 1 driver of the moment...







A

**s the silver Mercedes** of Lewis Hamilton filled his mirrors through the spray and gloom at Suzuka, Esteban Ocon knew he had a fight on his hands. From far back, the seven-time world

champion would appear on the inside line at the hairpin, trying to spook Ocon into a mistake. The younger man neatly dodged the attack, making a wider line work to cut Hamilton off at the exit, only to face another assault moments later at the Spoon – where he again held his nerve and left the draggy Mercedes trailing.

This dance continued for lap after lap as Ocon stubbornly kept Hamilton at bay until the chequered flag. It may have only been for fourth, and it was relatively brief owing to the circumstance of the race – a 40-minute sprint following a rain-induced hiatus – yet it was a deeply impressive display from a driver who is standing out in Formula 1's congested midfield.

It's warmer and drier in Austin when *GP Racing* sits down with Ocon but, while enough time has passed for the initial post-race buzz to pass and for him to put the weekend in perspective, he's still delighted to be complimented on his achievement and declares it "probably one of the best" performances of his F1 career – a list which achieves a grand prix win.

"In a long race, it would probably have been more tricky to keep Lewis behind," he says "I knew it was a sprint, we would get a shot at it, which is why I defended so hard."

Suzuka stands as the high point of what Ocon feels is his most complete season to date in F1. It might have lacked the peak of his shock Hungary victory last year, but he has more points finishes to his name, rekindling some of the consistency that made him such a force in junior categories and his early F1 career.

"I feel I've taken a step," Ocon says. "I was driving at a very good level last year, but I'm just feeling more at home. It has been one of my best ►





seasons. Probably the best season so far.”

Looking from the outside, you could argue that not a lot has appeared to change about Ocon this year. His status as a grand prix winner hasn’t turned him into a diva, not that he ever seemed predisposed to do such, nor has it led to any great friction with Alpine team-mate Fernando Alonso.

But those close to Esteban have noticed a definite change in the past year. He now has more of a support team around him to help him focus on the driving side during race weekends, and he’s begun to expand his interests beyond F1; in October he appeared at the Ballon d’Or ceremony crowning the world’s best footballer. While it’s not on the scale of Lewis Hamilton’s burgeoning portfolio of outside interests, it’s made Ocon more well-rounded; not *just* an F1 driver.

Ocon has also dug even deeper in his physical preparations. He’s been working with a new trainer, Tom Clark, since 2021, and lives closer to his training facilities. He says now he’s essentially doing a training camp between races, instead of just one every few months. “Even if you don’t see it, I’m managing to pick up more weight, I’m stronger physically,” says Ocon.

“That contributes to my wellbeing. I’m feeling strong. At the end of a race, I feel I could do two or three race distances and I wouldn’t be tired.”

Attending to these details has been a contributing factor to Esteban’s on-track gains in broader terms than race-day strength and stamina, he believes. It’s given him greater confidence for starts and the opening lap, as well as maximising his performance on Saturdays. “I’m finding that rhythm again,” he says.

**Ocon kept Hamilton at bay for lap after lap in the tricky conditions at Suzuka, a performance he rates as one of the best in his F1 career**

“Qualifying has been great too. I’ve managed to get 100% out of the car at quite a few races, more than previously, more than I remember.”

Ocon might have ended his formal ties with Mercedes when he joined Alpine for 2020, but there are still management links in a relationship that is “dormant”, according to Toto Wolff, who has also been impressed by Esteban this year, particularly his consistency. “Fernando is very quick, and you can see that in qualifying, but then Esteban is always there,” says Wolff. “He always picks up the points, and that is why he has this solid advantage. It was the same in GP3 and Formula 3. That’s what it’s all about.”

A look at the points would suggest these gains have led to Ocon emerging as a potential team leader at Alpine; indeed, he’s outscored the two-time world champion on the other side of the garage. Alonso has been known throughout his career for quickly gaining the alpha status over his team-mates, yet things have been different with Ocon. In fact, Alonso has been outscored by Ocon – 156 points to 152 – at the time of writing, with two races to go in their two-season spell as team-mates. Should Ocon remain in front come the end of the season, he would be the first team-mate to enjoy a superior overall record against Alonso since Lewis Hamilton in 2007.

The Hamilton comparison is one Ocon has made himself, claiming only Lewis had done a better job as a team-mate to Alonso. This sparked Jenson Button, Alonso’s team-mate through two miserable years at McLaren 2015 and 2016, to reply on Twitter: “I will have to disagree.”

In contrast to the general tenor of social media discourse, Ocon reached out to Button after seeing this riposte. He wanted to be clear he hadn’t made the comparison with the intention of causing offence.

“We talked, it was funny,” says Ocon. “I didn’t necessarily remember, but one of the years, he did extremely well.” Button outscored Alonso 16-11 in 2015, but was defeated 54-21 the following year before hanging up his helmet.

Alonso has always been gracious about Ocon’s role as his team-mate, particularly in helping him to get up to speed in early 2021 when Fernando was making his F1 comeback. But when *GP Racing* broaches the subject of Ocon’s Hamilton comments with Alonso, he smirks. The topic of his points tally this year remains a sore one, and perhaps rightly so given the number of incidents that have cost him scores this year. Such nuances remain invisible in a bald comparison of overall points. ▶







Being responsible for delivering the Ballon d'Or was a sign that Ocon is beginning to expand his interests outside of Formula 1





“Last year, it was very close, especially the beginning of the year,” says Alonso. ‘He was faster in quali, in the race and everything.

“This year, I think I may have a different opinion. It has been one of my best seasons. But the standings will never say that and I will probably finish behind.”

If relations have been largely harmonious between the drivers at Alpine this year, it’s not necessarily a given that they will remain so in 2023. Having lost Alonso to Aston Martin and putative Alonso replacement Oscar Piastri to McLaren, Alpine has turned to another French race winner: Pierre Gasly. This is a fascinating development since it’s long been understood that Gasly and Ocon don’t get on – to the extent that in recent years they’ve even cropped each other out of photos posted to their Instagram accounts.

Back in their early karting days, they were extremely close. The first time Gasly got behind the wheel was in Ocon’s go-kart, while their families would help each other as both boys dreamed of a career in F1. The causes of the schism are rumoured, if not really known, and appear to stem from their early teenage years. Both have been adamant their relationship has improved with time in F1.

Ocon laughs when asked if he finds the continued questions about his relationship with Gasly annoying. “It is a bit, because there’s really no huge drama [with Pierre Gasly],” he says. “I understand you guys would like more drama, because you have some articles to write! But no, there is none of that. The important thing for us is to work together, to get that car to win. Once we get that car there, it’s up to the best [driver] to win. We need to get there first.”

**“THERE’S REALLY NO HUGE DRAMA [WITH PIERRE GASLY]. I UNDERSTAND YOU GUYS WOULD LIKE MORE DRAMA, BECAUSE YOU HAVE SOME ARTICLES TO WRITE! BUT NO, THERE IS NONE OF THAT”**

**It’s going to be an all-French line-up at Alpine in 2023 when Ocon is joined by AlphaTauri escapee and former karting rival Pierre Gasly**



**The relationship between Ocon and Gasly is said to have improved a lot from the days when they cropped each other out of photos (above)**

Ocon doubts Gasly will need much help getting up to speed. “He’s very experienced, he’s driven for different teams, he’s driven a lot in testing also prior to that,” says Ocon. The two are spookily well-matched for stats: each has one win, Gasly is ahead on podiums 2-1, but trails for points 351-333. These are very fine margins, pointing to it being one of the most

well-balanced line-ups on the grid without an evident team leader.

The story of how two young kids from Normandy with a dream could one day become team-mates for a French team has been repeated often, but it’s a good hook. The French connection is one Alpine has leaned heavily on since rebranding from Renault for 2021. Now with two French drivers, the team can go all out on that front.

There is also more stability than before at Alpine. It has clearly got a good grip on the new regulations, evidenced by its development path which has made it the fourth-fastest team. It will stick with the car concept for next year, placing focus on getting to the weight limit.

Esteban’s first impression of Alpine’s 2023 car in the simulator is also very positive. “It was very encouraging, and incredibly fast I would say,” he adds. “OK, so far it’s only simulations, but it feels good.”

But at the top, there is now also certainty. And all signs point to this being the first winter for several years which will pass without some form of management restructure, following the rotating door of senior management at the team, including Cyril Abiteboul, Marcin Budkowski, technical director Nick Chester, and even former Renault Group top dog and double bass escape artist Carlos Ghosn. Ocon also points out that it’s a very different scene from his first visit to Enstone in 2010, back when Eric Boullier was in charge.

“It’s crazy, I’ve seen a lot of change,” says Ocon. But he expresses his faith in the stability now offered by team principal Otmar Szafnauer – who called Esteban’s Suzuka efforts “world class” – as well as Alpine CEO Laurent Rossi and Renault chief Luca de Meo, whom he sees as real racers. “We are settled, we have great leadership with Otmar, Laurent and Luca,” he adds. “It’s a fantastic team. I definitely feel more relaxed.”

Alpine has been clear from day one that Ocon



Ocon and Alonso have been evenly matched, and Alonso credits Ocon for helping him get up to speed on his return to F1 in 2021



is a key part of its long-term future. Its decision to give him a deal running to the end of 2024 after his performances last year was proof of that. But it's also helping to bring the best out of Ocon. He's feeling relaxed and stable, physically better than ever, and is liking the early signs from the 2023 car. It's all shaping up well.

The goal now for Alpine will be to take things to the next level. As the budget cap bites and the advantage of the 'big three' becomes less pronounced, it should open more opportunities for Ocon to make good on the talent that enabled him to defeat Max Verstappen in F3 and star throughout his junior


career despite his struggles for funding.

The prospect of it all coming together so he can fight at the front is something Ocon says is "nice on paper, but we need to get there." He's a realist who knows all he can do is put in the hard work to try and ensure the wins and championships will then follow.

"That's why I say keep your feet on the ground, keep working, see what's going to get us there," he says. "But it's my aim, yeah, it's what I believe I can do. And I'm not counting the work that I'm putting in. Every week I'm back at the factory."

We might think of Esteban as a young driver but he's already beginning to joke about

"getting old" at the age of 26, given he's into triple figures for grand prix starts. For now he might be confining himself to speaking in jest about this but, as our conversation concludes, he throws forward to the (presumably distant) moment he does hang up his helmet, and a promise he has made to himself. Fittingly for a proudly French F1 driver, there is a touch of Édith Piaf about the sentiment.

"When I finish my career, I don't want any regrets," Ocon says, "to say 'maybe if I did do that, that could have brought me to a higher place.' That's not something I want. It's all down to me. That's what I want to achieve." 







# CHARLES LECLERC

Max Verstappen's nearest challenger from outside the Red Bull family explains why he still feels lucky to be a Ferrari driver – and, while company president John Elkann has given the team a deadline of 2026 to claim a world title, Charles is in a hurry to close the deal long before then...

**You started your 100th grand prix in Mexico. Was it a milestone that you felt coming or did it go by quickly?**

I never stopped to think about it. In that time I've driven for two teams and, if I think back to my first grand prix, I think I've grown a lot. At the same time it feels like yesterday, I remember very well the emotions before the debut in Australia in 2018, to be there on that grid was a dream come true.

**Do you still have moments when you say to yourself 'I'm a Ferrari driver' or is it all normal to you by now?**

Every now and then I like to tell myself I'm lucky to be where I am. It's a quick thought, because immediately afterwards I think I still have a long way ahead of me. I'm happy with what I've done and to be where I am but I have many goals ahead of me, the first of which is to be world champion. From 2021 to 2022 we've taken a big step forward, but there's still another big step to take.

**Are you one of those drivers who sits down to review the race on Mondays?**

I'm already watching it on Sunday night if I can download it before I'm in the air. I like to do that because from the car you don't have the overview of the race – you have an idea of your race and sometimes you don't understand certain choices because you don't know the conditions your opponents were in at that specific moment. So it's useful, because you have the big picture.

**When did you realise you would no longer have a chance to win the drivers' title this year?**

A lot of people think this moment is the French Grand Prix, but for me it was Spa. During the summer break I believed we still had a chance to stay in the race until the end, then came the Belgian Grand Prix and it was the first weekend of the season where Red Bull really proved to be superior in terms of pace.

**You've pointed out some aspects that were lacking in Ferrari's race management. Up until Melbourne it seemed like everything was there. What happened after that?**

At the beginning of the season our car in general was better than Red Bull's. Then they took steps forward, we saw what they brought to the track on so many weekends, and for our part this led to a difference in performance between qualifying and the race. At the moment I think the points we need to improve are tyre management, communication, strategy and reliability, the latter being a problem we had to deal with in the first half of the season. I think we've made progress on communication and strategy, especially in the past few races. As far as tyre management is concerned, we still need to make progress – we've seen a stronger Red Bull on this front especially in certain conditions, such as at Suzuka.

**FROM 2021 TO 2022  
WE'VE TAKEN A BIG STEP  
FORWARD, BUT THERE'S STILL  
ANOTHER BIG STEP TO TAKE**

**Your team-mate said he had a lot of work to do to get familiar with the F1-75. What was your approach with this car?**

I think all the drivers have had to change their driving style in some way because the cars are heavier than their predecessors. I had to change a few things. We did a great job during pre-season testing, we grasped immediately what we needed to focus on and what these new cars needed in terms of driving. Already at the first race I felt good with the car, I had the feeling I could extract the maximum potential. Personally, the aspect I liked the most was a strong front end, and especially at the start of the season the handling was just what I like.

**Next year a calendar with 24 races awaits you. How do you cope with such an intense season?**

It's tiring, but it's not a comparable tiredness to a hard day in the gym. It's much more gradual, and it's something that until last year I handled badly. I couldn't tell when I needed to take a break, to stay at home three days quietly. I was always busy doing something.

This year I felt the need to have some quiet moments and I saw the benefits. Last season, at this stage of the championship, I was very tired but I didn't feel it so much. Then, after Abu Dhabi, I was sick for a fortnight.

**You said you want to win a world championship as soon as possible. That sounds a lot like 2023...**

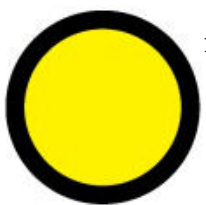
Exactly! I know the president [John Elkann] said it's a goal to be achieved by 2026, but as a driver I can't think about that deadline. I'm very impatient, I will prepare and do everything I can to be world champion in 2023.



# GOOD THING NEVER GIVE UP ON A

**Nyck de Vries** had almost given up on his dream of racing in Formula 1 when he got the call-up to stand in for Alex Albon at this year's Italian Grand Prix. But how pivotal was that in getting him a full-time ride with AlphaTauri next season?

WORDS OLEG KARPOV PICTURES  motorsport  
IMAGES



**On Christmas Day 2020,** a special gift from his son awaited Hendrik de Vries, a Renault dealership owner and an amateur racing driver from the Netherlands. Nyck, who shares his father's passion for racing, had realised one of his lifelong dreams just a couple of weeks before the holidays, by taking part in official Formula 1 testing for young drivers – and in title-winning machinery, too. Nyck made sure his dad would have something to remember a day that was so special for both of them.

“After my first season in Formula E I got given the rookie test with Mercedes for the first time, and I was super-excited and happy... because I

thought I was never going to drive a Formula 1 car,” recalls the man who will be one of the 20 full-time drivers on the grid of the world's main racing championship next year. “I was super happy. And I have a very emotional relationship with my dad and my family, so for Christmas I gave him a picture from that Abu Dhabi test, when I first drove a Formula 1 car, and I wrote some things on the back. It basically said that ‘after so many years we finally drove one!’ And I remember we all cried.”

Nyck was already almost 26 at that point. He'd had a junior career full of successes but not exactly spectacular. He won two Formula Renault 2.0 titles in 2014 – in the Eurocup and Alps series – but it had taken him three years

in the category to achieve that. He then finished third in his only season in Formula Renault 3.5 (trailing Oliver Rowland and Matthieu Vaxiviere, now regulars in Formula E and the World Endurance Championship respectively) before ending up sixth in GP3 the following year.

De Vries added the Formula 2 title to his list of achievements in 2019, but that too had taken him three full seasons in the category – so even a win in the most prestigious junior series didn't put Nyck's name on F1 teams' shortlists. And that Abu Dhabi test in December 2020 was more of a gift from Mercedes motorsport chief Toto Wolff to one of his Formula E drivers than anything else.

Nyck admits he'd almost given up on his ▶







dream to line up at the start of an F1 grand prix.

“It kind of comes and goes,” he says of that dream. “Of course everyone’s goal is to be in Formula 1. I mean, every young driver shares that dream. But obviously, when I moved away from F1 after Formula 2, I kind of thought that that was going to be my direction.

“Has it ever gone away? No. But was it always consciously there? No. I guess when you always somehow keep some belief and work for it and fight for it, yeah... sooner or later things work out. And I just always believed hard work pays off. And yeah, I guess that’s applicable to this particular occasion.”

When de Vries was still in karting, there was little reason to doubt he’d make it to F1 at some point. Nyck was racing the likes of Carlos Sainz, Daniil Kvyat, Alex Albon and Pierre Gasly, and was arguably faster than all of them. Partly that was down to his frame – he was simply smaller than all his aforementioned peers.

In any case, even before stepping up to single-seaters de Vries joined the McLaren junior programme. But he couldn’t parlay that into becoming the next Lewis Hamilton, in part due to that small build.

“I think everyone’s career is unique, and everyone walks their own path,” he says of the fact that many of his karting mates have already spent several seasons in F1, scoring podiums and

wins. “Of course, our karting times were very successful. But I think I had a slightly tougher time to start in single-seaters... Well, I say that, but then in my first season in Formula Renault, I was team-mates with Pierre [Gasly] and he had a year’s experience and actually I finished in front of him. And I remember my first Eurocup race I was on the podium with Daniil [Kvyat]. But still, I didn’t quite... it didn’t quite click in the beginning. Also me, physically, I was mature in terms of maturity for my age but, physically, my body was like 14. And I think that made a bigger difference than we realised at the time.

“I wasn’t fully in control. I might have been mature but emotionally I was always very committed to my career. And I think I was overdoing stuff. I just needed more time. And I think we’ve also maybe not had the right timing and momentum on our side.

“But everything happens for a reason. And even though you might think I could be frustrated for not being here [in F1] while I see 80% of my old friends [here], I think it’s always important to remind yourself of what you do have. It’s always easier to look at others and say,



**De Vries slips into the Williams for the first time at Monza (below). On track (right) he made it through to Q2, where he finished 13th fastest**



## “IN BARCELONA, I WAS SHITTING

‘ah, you know, he has that and I don’t, and he has this and I don’t’. But I’m also in a privileged position with everything that I’m doing, everything that I’m racing, and probably there are people who wish to be in my position as well. So I tried to be grateful for what I have.”

And there are certainly things to be grateful for, and proud of. In Formula E, Nyck added another title to his CV, one which in turn helped him revive his F1 dream. He was already a player in last year’s silly season, but talks with Williams, seeking a George Russell replacement, came to nought as the team opted for Alex Albon.

Yet Nyck would take another step towards







## MYSELF. I WAS SUPER-NERVOUS, BECAUSE THAT WAS A CHANCE TO SHOW MYSELF IN A PROPER GRAND PRIX WEEKEND”

an F1 seat, taking up the reserve driver role for several teams and getting to take part in several Friday practices, thanks to a rule change that now requires teams to give mileage to rookies. At Barcelona de Vries made his debut in an official grand prix session, replacing none other than Albon behind the wheel of a Williams.

“When I won F2 and went to Formula E, the only wish I had [was] to just drive a modern F1 car... just to get the feeling for it, because that’s what we’re all dreaming of,” he says. “And then you get the taste of that and then... suddenly they call you later during the winter to maybe consider you as a reserve. And then you travel to

[grand prix] weekends. And then you get to do the rookie test again. And then this season they had this rule forcing teams to put rookie drivers in the car during FP1s.

“And I remember in Barcelona, I was shitting myself. I was super-nervous, because that was a chance to show myself in a proper grand prix weekend. Again, my parents showed up without [me] knowing and they were in the grandstand in front of me...”

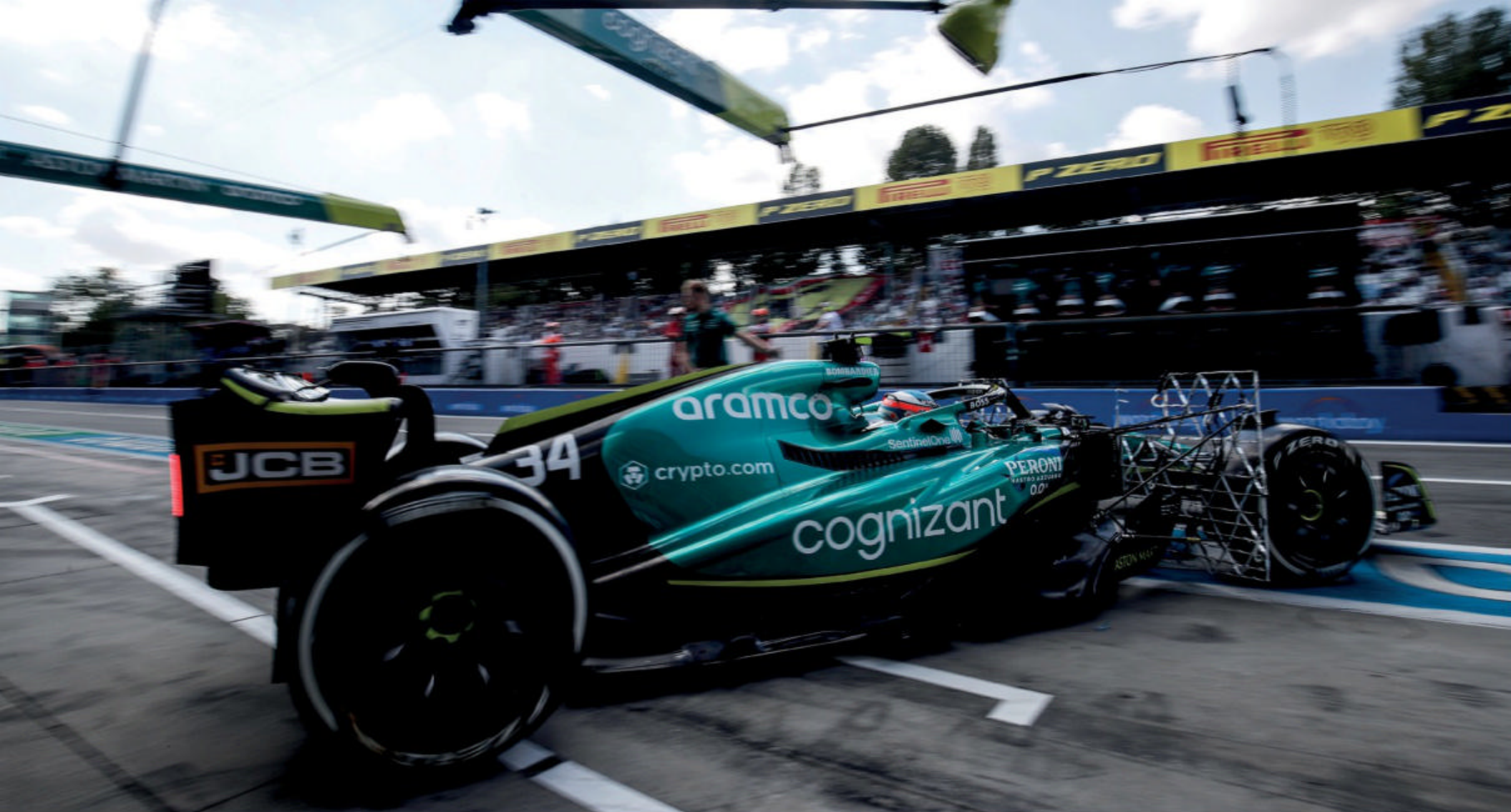
It would be wrong to say unequivocally that the Monza weekend which gave Nyck a chance at an F1 start was the decisive moment which changed his career. He was already in talks with

teams about racing in 2023 before the Italian GP, and his name was on several shortlists once the market kicked into gear following Sebastian Vettel’s retirement decision. But it was the Monza performance which allowed Nyck to dispel any lingering doubts about his credentials.

He was originally there to do an FP1 session for Aston Martin – his third for the season, since he’d also run in France for Mercedes.

“Obviously, as a reserve driver, you’re here, kind of chilling,” he recalls of the Italian GP. “You’re speaking with people, drinking coffee. And actually, you never think the moment comes where you actually need to jump in. During the ▶





Monza weekend I was convinced that Friday with Aston Martin [was the only chance to drive], so on the Friday night I stayed till 11 or 11:30 with the Mercedes engineers at the track, because I was just curious how their Friday was. I was hanging and chilling with them. I was in bed at midnight, which for me is way too late.

“And then [on Saturday morning] I was in the Paddock Club for an appearance. There weren’t too many people at the time, because it was early in the morning. So we were just drinking



**De Vries exits the garage for his practice run in the Aston Martin at Monza, which he thought would be his only track time**

some coffee, and then suddenly I got the call. And from that moment, I just remember I sent two messages, one to my family, and one to my girlfriend, and I only said “I’m driving!” with exclamation marks.

“I think what I’m so grateful about is, first of

all, it happened so quickly. So it was zero time to actually be conscious of what was happening and to get stressed. I was nervous, but there wasn’t a week lead-up to it, right? You just got thrown in deep and deal with it. So I almost think that helped in a way. And then on the Sunday... during the night I got very nervous.

“When you go into qualifying, you kind of... you feel pressure, and you know you have to deliver in that one lap and if you really want to stand out you need to be ahead of your team-

mate. But during the night [ahead of the race] it switched quickly from just being so excited to then becoming very nervous. So, first, like happy and excited, just buzzing, not kind of being able to sleep because of the excitement and then through the night it changed to being nervous. There’s always doubts. And there was so much unknown that I had a lot of doubts. I think that made me nervous, because I’d done zero long running, I’d never done a start [in F1].

“And morning, waking up, I was like, ‘Ooof, it’s gonna be a tough day.’ But then the closer I got to the ▶



**The early stages of the Italian GP and de Vries leads Zhou Guanyu and Carlos Sainz. Sainz would breeze past but not Guanyu**



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race, the more excited I got. And from the driver parade onwards, I loved every second of it. I was so happy to be there. And I remember when I walked from the grid to the toilets, there was someone interviewing me as I was walking to the toilets, and they're like, 'So, what's your game plan? What's your strategy?' And I looked at them and said, 'I'm just gonna have fun!' Yeah, I will remember that forever."

Getting to start a grand prix, having nearly given up on that dream, didn't just mean the world to de Vries. His father was also beside himself with excitement.

"He came to the race, and Dutch television tried to interview him on the grid," Nyck smiles. "And he didn't... there was no word coming out of him, because he was so emotional... And in the morning, on the Sunday... He always comes early. He's always awake early. So he was at the



**Williams team principal Jost Capito was obviously happy with de Vries after his Monza drive (right) as were the rest of the Williams team (below)**

grown and in the week after the Italian GP he had to put sentiment aside and consider how to make best use of that performance in the service of his career. After a Monday dinner with Max Verstappen, a friend since their karting days, de Vries made a speculative call to Dr Helmut Marko – and a few days later he was a guest of the Red Bull motorsport advisor in Graz.

Appetite comes with eating. The dream-come-true factor of a first grand prix start quickly made way for determination to ensure a permanent place on the grid.

"Maybe before that moment, I would have hoped and believed that it's [taking part in an



**"IT'S LIKE ANYTHING IN LIFE, ONCE YOU GET THE TASTE OF SOMETHING GOOD ONCE YOU JUST WANT TO HAVE IT ALL THE TIME"**

track before me, he was sitting there, and I saw him and I gave him a hug, but I couldn't even stand with him for a second because I could immediately feel we both, just looking at each other... almost started crying. We just couldn't even share a word. So I just walked off. I'm just so grateful. Grateful is the best word."

Nyck's weekend was almost as good as it gets. In his first-ever qualifying he outpaced his teammate with two and a half years of experience within Williams. And in his first race he held on for two points, with Williams having scored only four in 2022 before Monza.

But the euphoria passed quickly. His stock had


F1 race] kind of a dream being fulfilled, which is definitely the case," says de Vries. "However, that feeling disappears very quickly. Of course, I was kind of living on cloud nine, basically from after the race until quite some time after the weekend. But I switched back to reality pretty quickly.

"I guess I was already thinking about the next [step], because after such a weekend you also... it's like anything in life, once you get the taste of something good once you just want to have it all the time. And I think I very consciously switched my focus to try and utilise this, to materialise something, if that makes sense.

"It's like with that first rookie test. You live for

this moment all the time. Thinking, 'Ah, it would be just so nice to get to experience this.' And the same counts for racing in a GP. But then, when you've lived it and you did it and it went well, I guess my natural instinct was to look ahead and utilise it in order to make the next step."

It took him a while to reach F1. When next season starts Nyck will already be 28, which by modern standards is a lot. Verstappen was a grand prix winner in his teens.

"Never give up" may be an oft-overused phrase – but you can hardly find a better testament to the mantra than this Dutchman's journey to the fulfilment of his F1 dream. 





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# FIGHT THE HISTORY OF TYRRELL TO

PART 2: 1972-82

# SURVIVE

Glory days became increasingly infrequent after Jackie Stewart's retirement, but Ken Tyrrell's plucky and defiantly small team stayed bold enough to innovate – springing a surprise with F1's first six-wheeled car

WORDS MAURICE HAMILTON PICTURES



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By 1974 it was all change as the new driver line-up of Scheckter and Depailler discuss matters with the reigning world champ Stewart





After his short break due to a stomach ulcer, in 1972 Stewart returned to winning ways in France, watched by George Harrison (far left)

**T**yrrell won the 1971 championship with a team of 19 people – in total. The list of employees included Ken, his wife Norah (secretary/timekeeper/lap scorer) and Eric Baker (accountant). The rest, from Derek Gardner (design director) to Robin Coleman (transporter driver and racing mechanic), had done all that was necessary to build and run cars capable of winning seven of the 11 grands prix.

The final victory at Watkins Glen had been important for two reasons: a \$267,000 prize fund made the US GP the richest by far in F1; and a maiden win for François Cevert not only earned Tyrrell \$50,000 but also signalled the Frenchman's continuing rise as a serious contender.

The competitiveness of Elf Team Tyrrell might have seemed set to continue through 1972, but its fifth season of Formula 1 would fail to meet the high expectations generated with such apparent ease by the previous four. In fact, it was so poor by comparison that 32-year-old Jackie Stewart would be written off as having passed his best. The Scotsman had indeed lost his edge – but not because of the ageing process.

As a sign of only 12 grands prix on the calendar, Stewart had been able to accept a drive with Carl Haas in the CanAm series to go along with a hectic round of commercial appearances. Ken Tyrrell chose not to veto this decision so long as the relentless transatlantic commute didn't affect his driver's performance. But, unknown to Jackie, that's exactly what was happening.

The most obvious and surprising indication of impending trouble would come when Stewart spun for no apparent reason during the Spanish GP – and did it again in the rain at Monaco.

Goodyear's wet-weather rubber may not have been up to the job but, having felt continually fatigued and out of sorts, Stewart knew the problem went much deeper than a lack of grip.

When a bleeding stomach ulcer was diagnosed, the full effect of Stewart's punishing schedule was revealed. There was no alternative

but to miss the Belgian GP. At the same time, a win for Emerson Fittipaldi at Nivelles consolidated the Lotus driver's position on top of the championship, where he would remain mid-season and encourage further rumours of the reigning champion's impending retirement. Stewart, making a rapid return to fitness, knew that track performance was the best way to deal with the doubters.

He won in France, finished on the podium at Brands Hatch and was set to close the gap on Fittipaldi in Germany on a day when the Lotus driver suffered a rare retirement. Going into the last lap on the Nürburgring Nordschleife, Stewart was challenging Clay Regazzoni for second place when the Ferrari driver shamelessly barged the Tyrrell off the road. Stewart was livid.

Today, such a significant collision would promote an instant chorus of indignation from the wounded team's pitwall. In 1972, even allowing for the incident being out of sight, Ken Tyrrell's reaction was indicative of different times. While Stewart protested vehemently to the organisers and representatives from the sport's

**THE GRANDSTANDS ROSE IN APPLAUSE. ELF TEAM TYRRELL WAS THE YARDSTICK ONCE MORE. THOUGHTS OF STEWART'S RETIREMENT FADED AWAY. BUT NOT FOR THE MAN HIMSELF**





Stewart managed fourth in Monaco in 1972, but a spin en route to the position was further evidence that all was not right with the Scot

governing body about their failure to discipline Regazzoni, Tyrrell got on with packing up. He offered sympathy and agreed with his driver about the loss of important points but, as far as Ken was concerned, the race was over. What was done, was done. If Stewart wished to pursue the matter elsewhere, that was up to him.

Tyrrell had other things on his mind. Since Fittipaldi was on course to wrap up the championship, Ken was keen to have Stewart race a brand-new car for the first time at the next GP in Austria. Tyrrell 005, with its slab sides and stubby appearance, was lower and shorter than its predecessor. Stewart's first two races with 005 were bedevilled with teething problems but, for the season's North American finale, the Tyrrell team was back into its stride. Stewart won at Mosport and headed a one-two finish at Watkins Glen. Given the substantial purse on offer in the US GP, Ken had entered a third car for Patrick Depailler, who finished seventh in his second GP. As the three blue cars returned to the pits in formation, the grandstands rose in applause. Elf Team Tyrrell was the yardstick once more. Thoughts of Stewart's retirement faded away. But not for the man himself. ▶



After two difficult races with the 005 in 1972, Stewart took the car to victory in Canada and followed that up with a win at Watkins Glen





Stewart had already decided to retire before he took his third title. His last appearance was during practice for the tragic US GP in 1973

In April 1973, Stewart would tell Tyrrell and Walter Hayes of Ford that this season would be his last. No one else was to know; not even Jackie's wife, Helen. Thoughts that Stewart's sublime talent would be compromised were disabused by five commanding victories, with the most brilliant drive of all coming in a race he didn't win. A third championship for the Scot was a formality by the time they reached Monza in September but, on race day, it seemed the necessary few points would be denied when Stewart picked up a puncture. He rejoined from the pits in 20th place, seemingly out of contention on a very fast track with few opportunities to make gains. Stewart destroyed the lap record time and again. After 20 laps, he was 11th. By lap 40, he was sixth. Finishing fourth was good enough to secure the championship with a drive Ken Tyrrell reckoned to be on a par with Stewart's mesmeric win in Germany in 1968. Praise indeed.

Throughout this campaign, Cevert had emerged as a strong and competent number two. Indeed, Stewart went so far as to say the Frenchman was the quicker of the two as they dominated on the Nürburgring Nordschleife and could have taken the lead had he been so minded. But the fact that François stayed in the master's wheel tracks demonstrated a

willingness to continue learning while respecting a powerful team ethic that continued to form the company's bedrock. Ken was in no doubt about Cevert's future as Jackie's replacement.

With the championship settled, the team was in a relaxed mood as they arrived amid the rich autumnal colours of the Finger Lake region of New York State for the final race of 1973. That sense of warm well-being at Watkins Glen was to be torn apart, along with Tyrrell 006, when

## THROUGHOUT THIS CAMPAIGN, CEVERT HAD EMERGED AS A STRONG AND COMPETENT NUMBER TWO

Cevert lost control at the fast uphill Esses and was killed instantly. The enormity of the accident was such that it would live for ever with those – Stewart included – who stopped and ran to a scene of terrible devastation. Tyrrell had no hesitation in withdrawing from what should have been Stewart's 100th Grand Prix. One week later,

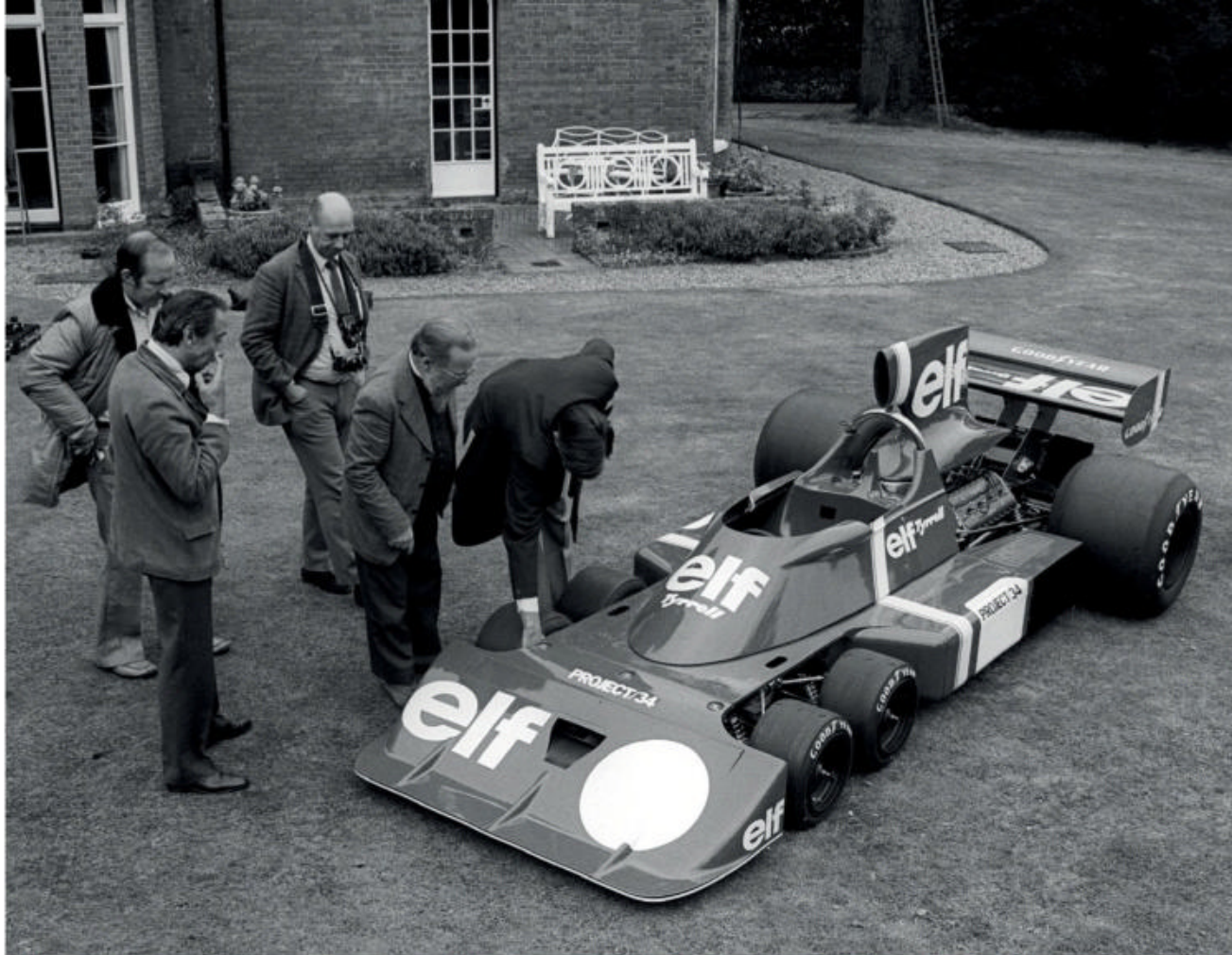
Jackie formally announced his retirement.

With the first race of 1974 due in less than three months, Tyrrell had no time to lose. He had already spoken to Jody Scheckter with a view to having the fiery South African join Cevert. Now, with the team's circumstances having been changed so drastically, Scheckter would be thrust into the lead role with the even less experienced Depailler in support. It was the anthesis of the Stewart/Cevert partnership that had been

regarded as the strongest on the entry list. Even worse, the novices had difficulty getting their heads around the nervous 005 (Depailler having driven 003 in France and the US). The best Tyrrell could manage was fourth in the third round in South Africa.

Help was at hand in the more elongated shape of Tyrrell 007, Gardner's answer to the shortcomings of its predecessor. Scheckter, in particular, felt more at home, as proved by fifth, third and then second in Spain, Belgium and Monaco. A seemingly impossible continuation of the mathematical sequence occurred with victory





After three wins in 1974 and 1975, Tyrrell went radical for 1976 with the P34 (top). Its finest moment was a one-two in Sweden that year



Cevert (top) was lined up to be Stewart's successor. An impromptu service (above) was held after his death at Watkins Glen in 1973

at the next race in Sweden, Depailler adding to the sense of disbelief by setting fastest lap on his way to second place. A month later, Scheckter would win again at Brands Hatch. And Ken had thought his team would be fortunate to score a couple of podium finishes by the season's end.

At least Tyrrell had been ready to maximise the success. François Guiter, the astute head of promotions for Elf, had spotted an opening by providing a watering hole for journalists otherwise at the whim of the paddock burger van or occasional scraps from the table of a friendly team or trade supplier. Eoin Young, a freelance writer with an intimate knowledge of the bona fide media – not to mention fine wine – was hired to act as maître d'. The Elf Team Tyrrell motorhome became the most sought-after ticket among members of the fourth

estate. This nurturing of positive PR would prove useful when, apart from an emotional win for Scheckter in South Africa, 1975 turned out to be a comparatively mediocre season. Meanwhile, Tyrrell had something in mind that would generate lively editorial copy for years to come.

On 22 September 1975, Guiter brought a party of French motorsport media to a London Heathrow hotel, where they joined other journalists keen to know what could be so important at this time of year. When the sheet was slowly removed from the rear of a single-seater, there were audible gasps – followed by stunned silence – when the reveal finally reached the front. A six-wheeled F1 car had been produced in total secrecy despite the need for outside suppliers to manufacture special wheels, brakes and tyres. Gardner told the audience

that the car – known as Project 34 (P34) – was a concept for research purposes that might, or might not, have racing applications. There would be no doubt about the latter when competitive times were set during winter testing.

The P34 made its race debut in Spain, the fourth race of the 1976 season. Any lingering doubts about the feasibility of the concept began to be removed when Scheckter and Depailler finished second and third at Monaco. Misgivings vanished completely following an extraordinary one-two in Sweden. The fact that the team, in truth, could not pin-point the reason for this success would become apparent when the results gradually began to slip south as the season rolled on. The problem lay mainly with front tyre development being hostage to Goodyear's understandable prioritisation of standard





By 1980 the main headlines Tyrrell made were to do with crashes, such as this opening-lap shunt at Moanaco which took out both cars

rubber for championship contenders Ferrari and McLaren. When Scheckter decided to quit and join the fledgling Wolf team for 1977, he described the P34 as 'rubbish'. Never a man to mince his words, Scheckter nevertheless had warm praise for the team itself.

Tyrrell's reputation remained compelling enough to attract both Ronnie Peterson as Scheckter's replacement and First National City Travelers Checks as co-sponsors with Elf. Money from the US bank would help establish a research and development department. Led by Dr Karl Kempf, this would be ground-breaking on several fronts as the technically articulate American scientist began constructing a mathematical model for the P34, placed electronic instrumentation on the cars and installed a computer (state of the art in 1977) in the team's headquarters in Surrey. But not quickly enough for the here-and-now needs of F1. When Tyrrell failed to win a race for the first time since 1968, the P34 was canned, Peterson signed for Lotus, and Gardner quit.

Turbocharging had arrived with Renault in 1977. For the foreseeable future, however, Tyrrell could see no reason to abandon the Ford-Cosworth DFV. It remained a sound choice, particularly when Depailler won the 1978 Monaco GP in 008, designed by Maurice Phillippe, formerly Colin Chapman's right-hand man at Lotus. This gritty drive would be the season's highlight. Depailler claimed three more podiums whereas his new team-mate, Didier Pironi, was lucky if he reached the top six.

The 1978 season had been dominated by

the Lotus 79. Phillippe produced 009 for the following year but, unfortunately for Tyrrell and everyone else, Williams went one better with FW07, a clever development of Chapman's ground-effect phenomenon. Just as significant for Tyrrell, but in a different if crucial direction, Elf and City Bank had called time on their financial support. Tyrrell had come to rely completely on these two major players without thinking about nurturing sponsorship from anywhere else; the pair of royal blue 009s defiantly carrying nothing but the maker's name in large letters on each side was a stark indication of such naive folly.

If fifth place in the 1979 constructors' championship was bad, the following season would be even worse: Tyrrell drivers Jean-Pierre Jarier and Derek Daly endured more accidents than finishes in the points (awarded down to sixth place). The absence of money for

## WHEN TYRRELL FAILED TO WIN A RACE FOR THE FIRST TIME SINCE 1968, THE P34 WAS CANNED

development actually suited team members forced to spend most of their time rebuilding damaged chassis. Ken didn't augment his staff of 43, but the fact that no one chose to leave was a



Depailler was the one constant in the team in the latter part of the 1970s. His win at Monaco in 1978 was the team's last until 1982

gratifying indication of an enduring family spirit within the Tyrrell Racing Organisation.

It was therefore a sign of how difficult things had become in the winter of 1980/81 when Ken

was forced to keep a skeleton staff while making everyone else redundant for a brief period. Tyrrell didn't owe any money – but there was none coming in. Pay drivers would be a temporary solution in the second seat alongside Eddie

Cheever. But you didn't need to look far for signs of the Tyrrell decline: rain highlighted the outline of 'Candy' after the sponsor's name – on board for most of 1980 – had been picked off the



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Tyrrell gambled on Michele Alboreto in 1981 and the Italian repaid the favour with an opportunistic win in Las Vegas a year later

team's rather shabby umbrellas.

As a token of Ken's determination to continue fostering young talent despite his financial problems, he gave Michele Alboreto a chance in May 1981. After a couple of failures to qualify, the decision began to pay off with increasingly deft performances from the Italian. Despite the team's worst season – 8th in the 1981 championship – two fourth places early in 1982 helped attract support from Candy once more, along with other Italian backers. Alboreto's blossoming confidence matched his promotion to lead driver in a team

that continued to struggle.

The number of employees had been reduced to 33. Ken would examine every invoice and bill, no matter how small. When the stock of DFV engines ran low just before the high-profile race at Monaco, Ken brought one from the test bed to the south of France in the back of his Ford Granada estate car, saving man hours and freight costs at a stroke. Mediocre race results may have been scant compensation for this hardship but, when Alboreto finished fifth at Monza, it was impressive enough to trigger support from Denim going

## THE HEADY DAYS OF HAVING A TEAM OF 19 PEOPLE WIN 60% OF A SEASON'S RACES WERE LONG GONE



Tyrrell (right) with Eddie Cheever (left) and Kevin Cogan at Long Beach in 1981. Cogan, there due to much-needed sponsorship, failed to qualify

into the final round in Las Vegas. The aftershave company would come out of it smelling of roses.

On a zig-zag temporary track laid out in a hotel car park, the normally aspirated Tyrrell 011 would be competitive against the increasing performance advance of the turbos. When the leading Renaults fell by the wayside, Alboreto calmly picked up his maiden win – and the first for Tyrrell in four years. Ken wouldn't have to wait so long for the next one – which would be the last. The heady days of having a team of 19 people win 60% of a season's races were long gone. Simply surviving would take precedence over everything else as the sad and slow drift towards the exit gathered momentum. 



After the team ran former ABBA drummer Slim Borgudd for three races, Brian Henton stepped in to partner Alboreto for the remainder of 1982



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# BRABHAM



While it launched the F1 career of a future world champion, the BT60 was also the final nail in the coffin of a once-great marque





# BT60

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In 2021 David Brabham was asked if the family name might return to Formula 1. It's an enquiry he's accustomed to fielding, since the team founded by his father was one of the giants of F1 before it fizzled out in ignominy. The answer is usually "no" – and with good reason, since it took many years, much expense and a great deal of legal wrangling to regain the rights to use the Brabham name in motor racing.

This time, though, he opened the door just a crack. "Never say never," he replied. "If something in Formula 1 came up... It can't be anything – it's got to look right and have the right backing, because I've been in F1 without the right backing and I'm not going to do that again. So it would have to have significant funding to sway us."

David's determination not to have the family name sullied again is founded upon first-hand experience. As the Brabham F1 team was passed around like a tray of cakes to a succession of 'owners' with big dreams but shallow pockets, David was persuaded to drive for it in a bid to rebuild some credibility – or at least attract sponsors. It nearly destroyed his career.

The death of Elio de Angelis in 1986 was the beginning of the end of Bernie Ecclestone-era Brabham: technical director Gordon Murray lost his enthusiasm for F1 and only regained it when Ron Dennis offered him a healthy stipend to move to McLaren; BMW pulled out at the end of 1987; and Ecclestone had his eyes fixed on the bigger picture of Formula 1's TV revenues, a much more lucrative business than running a team. Bernie shuttered Brabham's F1 activities at short notice for the 1988 season and put it up for sale.

The identity of the next owner is a matter of conjecture and court injunctions as a consortium involving golfer Greg Norman and Williams team manager (and future *GP Racing* contributor) Peter Windsor was trumped by slot machine magnate Walter Brun. Or was it Swiss financier Joachim Luthi? Even the relaunched team's drivers didn't know: Martin Brundle signed his contract in the presence of Ecclestone and Luthi but, come the team's pre-season presentation (in a shopping mall near Zurich), Brundle and Stefano Modena were bamboozled to be introduced as Brun drivers. But hadn't Brun's EuroBrun team just slimmed down to a single entry, for Gregor Foitek, owing to lack of money?

Luthi, it transpired, was operating an enormous ponzi scheme, hence his supposed aversion to publicity (though he did appear in the Brazilian GP paddock with a sex worker on each arm). By mid-season Brabham was in limbo again as Luthi fled to the US to avoid charges and his empire unravelled. Team manager Herbie Blash – Ecclestone's eyes and ears on the factory floor – kept the lights on by arranging sponsorship from the Japanese credit card company Nippon Shinpan, and Brabham limped on to the end of the 1989 season. Yet more suitors came and went over the winter since the team's ownership was entangled in Luthi's complex and opaque web of holding companies.

David Brabham had won the British F3 championship and was expecting to contest the 1990 F3000 season with Dennis Nursey's Middlebridge Racing when Nursey informed him Middlebridge would be going into F1 – as owner of Brabham. The deal had been done as the cars were already on their way to

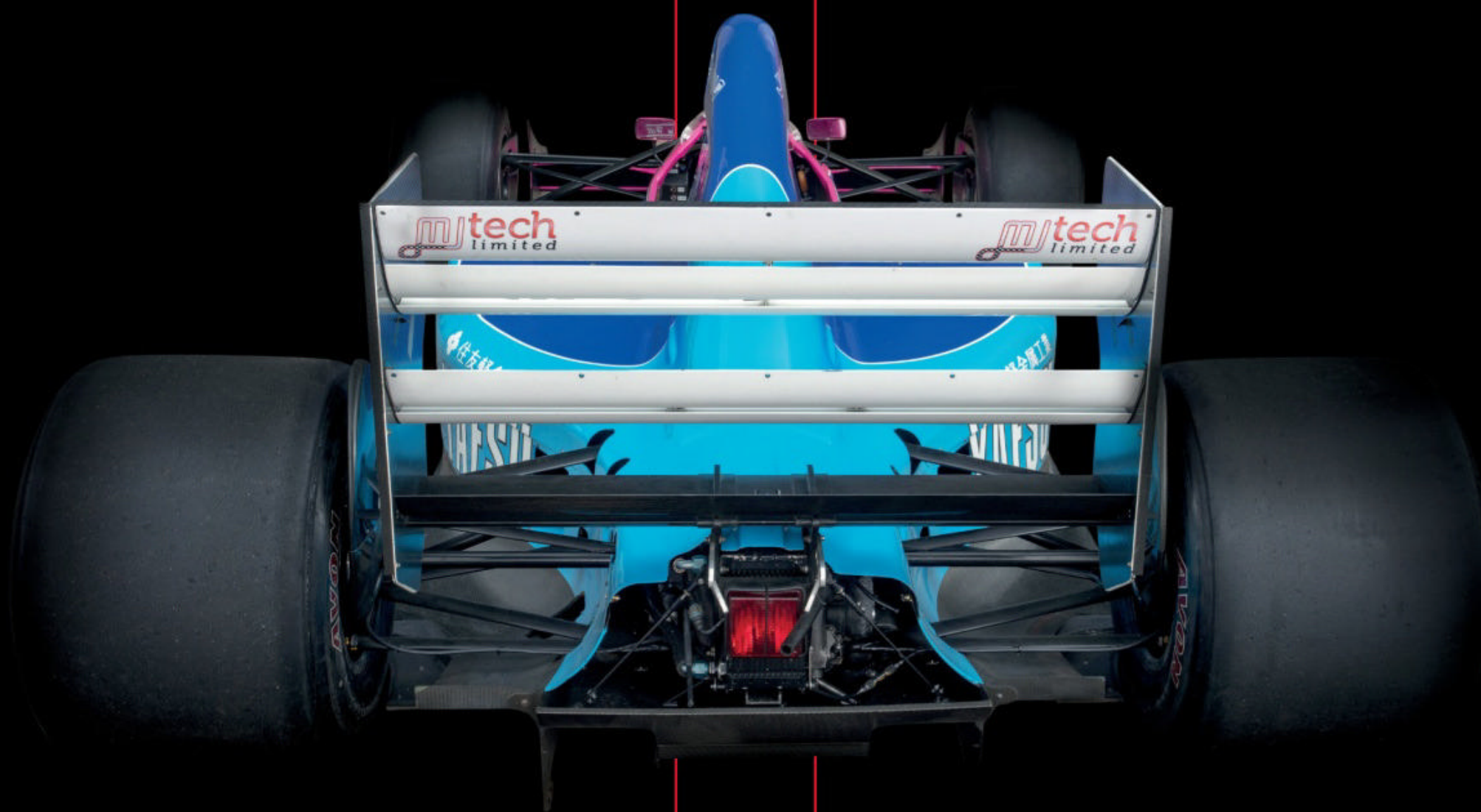


Phoenix for the first round of the season. A month later Nursey told David he wouldn't be entering F3000 after all, leaving David no option but to accept a proposal to replace Gregor Foitek at Brabham from the San Marino GP onwards. But the season was a disaster: there was still no money, the Brabham-in-a-Brabham failed to entice sponsors, and the promised transverse gearbox for the new Sergio Rinland-designed

## THE NEW BT60 LOOKED PROMISING, BUT IT ARRIVED LATE AND WAS PLAGUED WITH BUILD-QUALITY ISSUES FROM THE OFF







# BRABHAM BT60

NOW  
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BT59 didn't arrive until mid-season, by which time Judd was withholding engines until it was paid upfront.

A solution was at hand in the form of 'free' engines from Yamaha. The Japanese motorcycle and musical instrument manufacturer had big ambitions to build a road-going supercar, to be given credibility through a Formula 1 engine project, but its 1988 season with Zakspeed had been embarrassingly poor. Nevertheless Brabham was desperate and Blash, finding a proposal letter from Yamaha in the factory slushpile, flew to Japan on Christmas Eve '89 to do the deal.

At Blash's suggestion Yamaha's engineers began to draw a new V12 whose development would be aided by testing the extant V8 engine in a cut-and-shut BT58. Ecclestone, no longer the owner but keen to look after 'his' people, arranged track time for the BT58Y in Japan with Ukyo Katayama at the wheel after an initial run with David Brabham at Silverstone. For eight weeks over the summer of 1990, out of the public eye, Katayama tirelessly lapped the Sugo circuit as Yamaha chased better power and driveability – and improved reliability.

David retreated to sportscars for 1991, preferring a top-line drive with TWR-Jaguar to more back-of-the-grid grind in Formula 1. In came Martin Brundle and Williams test driver Mark Blundell. The new BT60, designed by Rinland and Tim Densham, Modena's race engineer, looked promising and featured a variation on the raised-nose aerodynamic concept already used to great effect by Leyton House/March, Tyrrell and Benetton (10 years later Rinland would design the pioneering twin-keel Sauber C20), but it arrived late and was plagued with build-quality issues from the off.

Brundle and Blundell contested the first two races of 1991 in BT59s adapted to take the new Yamaha V12, then found they could barely fit in the new car. Or, rather, they could *just about*

squeeze in, but a rapid enough egress to pass the mandatory FIA cockpit extraction test was impossible once their legs were ensconced within that neat raised-nose monocoque. Owing to a mistake in the measurements for the moulding buck, the bulkhead was incorrectly sited and neither driver could raise their knees enough to make a speedy exit.

A better-funded team would have been able to swallow the ►





cost of building new tubs but, instead, Brabham had to resort to cutting away part of the bulkhead – weakening the structure. The extent to which this reduced the BT60's rigidity and compromised performance is difficult to quantify but the car was still a step up from its predecessor; both drivers regularly made it through qualifying in an era in which the grid was oversubscribed, though neither scored points during the first half of the season. Engine failures caused several retirements and Blundell had just broken in to the top 10 in Monaco when he spun off on oil dropped by Modena's Tyrrell. That meant the indignity of pre-qualifying from Germany onwards, and the possibility of each weekend being over before practice began on Friday.

Blundell scored Brabham's first points of the year with sixth at Spa but then failed to make it through prequalifying when his engine blew on Yamaha's home soil, at Suzuka. Brundle ameliorated the company's embarrassment by claiming fifth.

But Brundle almost didn't drive that weekend. He'd refused to race again until his salary was paid and, in the event, the money had to come from Yamaha, who also agreed to buy Brabham's Chessington factory (from Ecclestone) to build components for its forthcoming OX99 supercar. Blundell, too, was unhappy, having had two payment cheques bounce.

From November 1991 Brabham's racing activities would be based out of Middlebridge Engineering's facilities in Milton Keynes – but without Rinland, who left to form his own engineering consultancy. Densham was charged with designing a BT61 for 1992 but, with no money for development, this was shelved in favour of adapting the BT60 to accommodate a different engine since Yamaha no longer wished to be associated with a company that didn't pay its bills. The noose





was tightening on Middlebridge.

How, you ask, did an organisation with apparently so little money come to own an F1 team? The Middlebridge Group's owner was the Japanese industrial magnate, Anglophile and classic car aficionado Koji Nakauchi. Middlebridge had interests in the classic car trade and had bought the rights to buy the Scimitar, a sports car originally designed by Reliant. It had even attempted to enter F1 under its own name in the mid-1980s with a year-old Benetton-BMW.

But the truth, as Brundle and Blundell began to suspect when they flew to Japan in early '91, expecting to be collected by a chauffeur only to be met by Nakauchi himself in a tatty Rover SD1, was that the money came from elsewhere. Landhurst Leasing, to be exact – a finance company whose principals would later end up in jail.

Even before the Brabham acquisition, Middlebridge was struggling with debt repayments; Landhurst directors Ted Ball and David Ashworth, car enthusiasts both with designs on being major players in F1, would cover defaulted loans by arranging new ones on other Middlebridge assets. In return they began to demand backhanders in cash. When Ball and Ashworth were charged with corruption in 1997 the

**FROM NOVEMBER 1991 BRABHAM'S RACING ACTIVITIES WOULD BE BASED OUT OF MIDDLEBRIDGE ENGINEERING'S FACILITIES**

**BRABHAM BT60**

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prosecuting QC jibed that “Ted Ball would have written a lease on the tyres changed after a pitstop.”

To buy Brabham Middlebridge borrowed £1m, which required Landhurst to breach banking covenants – for which Ashworth demanded £25,000 in cash. When the hoped-for sponsorship failed to arrive, Middlebridge had no alternative but to take on more debt and pay more bribes. Hence bills went unpaid, including the factory rent – for a week in August 1990 Ecclestone padlocked the gates.

To remain on the grid for 1992 Brabham fell back on paying drivers in BT60s adapted to accommodate Judd GV V10 engines. Belgian Eric van de Poele at least had the talent at this level to justify his backing; Akihiko Nakaya remains an open book on that front since the FIA refused to issue him with a super licence.

In his place came Giovanna Amati, reasonably competent in lesser machinery but lacking the experience and ability to qualify a year-old Formula 1 car which had been no great shakes to begin with. While van de Poele qualified 26th out

## BRABHAM BT60

## NOW THAT WAS A CAR

No114



of 30 entrants in the 1992 season opener and made the grid, Amati was four seconds slower and failed to make the cut. After two further failures to qualify – and promised sponsorship didn’t arrive – she was shown the door in favour of Damon Hill, who by this point was desperate to show that he was more than just a competent test driver for Williams.

“Everyone said I was mad,” he wrote in his autobiography. “They pointed out this was a dangerously underfinanced team. The car was worn out and Middlebridge weren’t going to be refreshing parts properly, but I simply thought, ‘I don’t have a choice. The time has come in my career when I have to show that I can actually drive an F1 car in competition. I’ll be getting good experience of the whole F1 procedure: going to drivers’ briefings; showing I can deal with being on track with all the big names; learning how to work with F1 engineers, the press. I have to do this.’”

Like Blundell and Brundle before him, Hill could barely accommodate himself in the BT60’s cockpit. His legs were pressed firmly against the cockpit sides, his right one almost



covering the gear lever to the extent that he could only shift into four of the six available forward ratios.

“It wasn’t bad but the power curve was a bit violent,” he mused, “and then a bit like a tractor at times thanks to me being unable to use the lower gears. There was no power steering and yet, despite these handicaps, it was strangely exciting to drive a no-hope car.”

In Hungary, where Brabham fielded just one BT60, Hill finished 11th, four laps down. That was the end of the Brabham F1 story on track, but not quite the conclusion of the saga. Middlebridge had run out of assets on which to secure loans, which in turn forced Landhurst to go cap in hand to its bankers – who called in forensic accountants, whose excoriating report led to Landhurst going into receivership. A Serious Fraud Office investigation found Landhurst had lent £121m to Middlebridge, only £70m of which was potentially




# IN HUNGARY HILL FINISHED 11TH, FOUR LAPS DOWN. THAT WAS THE END OF THE BRABHAM F1 STORY ON TRACK

recoverable, and that Ball and Ashworth had squeezed Middlebridge for £420,000 in corrupt payments.

The ownership-go-round continued as wannabe purchasers, including Japanese musician Damon Kagure (who attempted to finance it with a public ‘Brabham Aid’ appeal), were frustrated at the due diligence stage: much of the company’s equipment was leased, and most of the physical assets and intellectual property had

been transferred to one of Nakauchi’s companies in Japan.

There was one final scream as Brabham fell into the abyss. By late October 1992 word began to circulate that the team’s assets had been acquired and the cars sent to Galmer Engineering, the Bicester-based company which had designed and built that year’s Indy 500-winning chassis. The buyer was RM Motorsport, led by Alan Randall, a recent incomer to motor racing who had already caused ructions by ordering no fewer than nine Jaguar XJRs to contest various sportscar series as well as Le Mans – only for the promised sponsorship never to materialise. By late December Galmer had downed tools on its putative BT61 design as RM’s promised deposit failed to ring in the cash register. Only the initial deposit to the receivers had been paid and the BT60s were repossessed.

Little wonder that David Brabham’s longstanding response to those who approach him with a view to returning his family name to Formula 1 is: “Show me the money!” 

## RACE RECORD

- Starts** 27
- Wins** 0
- Poles** 0
- Fastest laps** 0
- Podiums** 0
- Championship points** 3

## SPECIFICATION

- Chassis** Carbonfibre monocoque
- Suspension** Double wishbones with pushrod-actuated inboard coil springs/dampers
- Engine** Normally aspirated Yamaha OX99 72-degree V12 (1991), Judd GV 72-degree V10
- Engine capacity** 3498cc
- Power** 650bhp @ 13000 rpm (Yamaha), 620bhp @ 12000 rpm (Judd)
- Gearbox** Six-speed manual
- Brakes** Carbon discs front and rear
- Tyres** Goodyear
- Weight** 505kg
- Notable drivers** Martin Brundle, Mark Blundell, Damon Hill



# MAURICE HAMILTON'S

# ALTERNATIVE VIEW

While F1 teams rage about each other's spending, our man recalls a time when cooking the books was a collective effort



English, French and Australian.

There's also confusion over when the FIA auditor might have finished, on the basis that he wasn't quite finished when he mistakenly thought he might be, assuming he was intending to complete his work in the allocated time and avoid having to award only 75% of the penalties if the time taken was shorter than anticipated, which it was, although he didn't know it and the 75% didn't apply in any case.

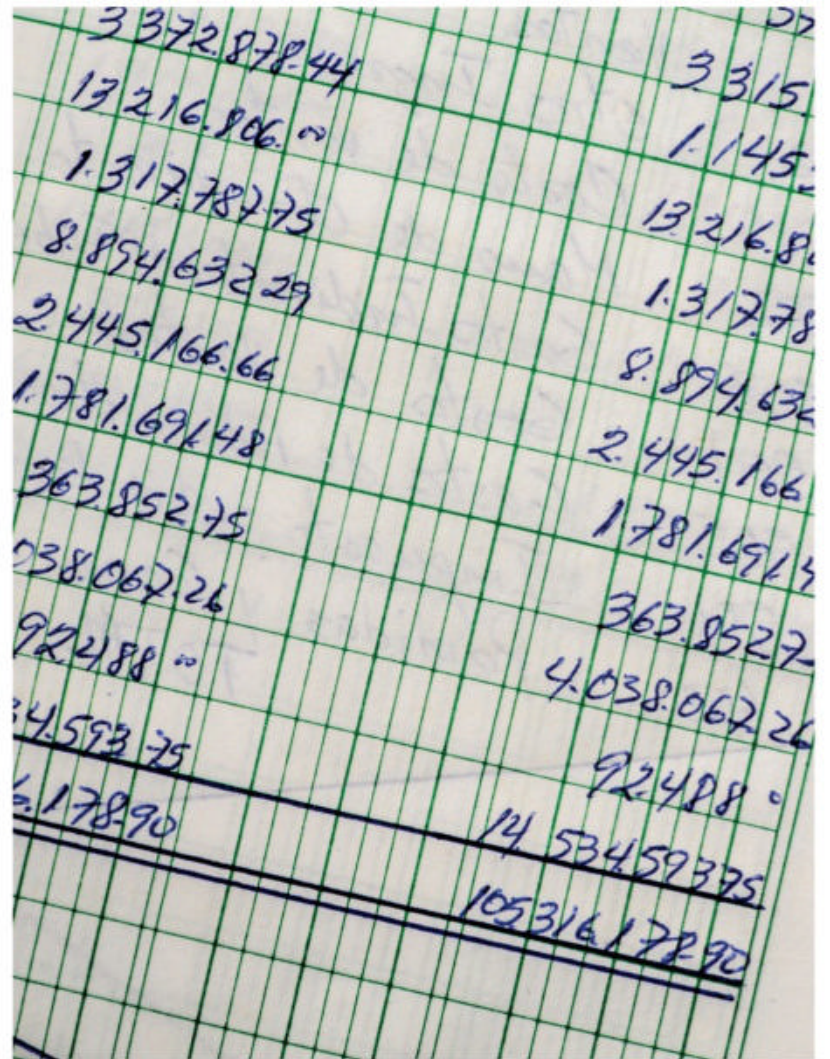
Latest developments have also highlighted the need for drivers to study their employer's accounts to ensure they are not being shafted by the apparent incompetence of the team's accountant. The FIA now requires F1 drivers to have, along with a super licence, a qualification in basic mathematics and logic.

We have been leaked this sample test question to check out a driver's arithmetic skill: if it takes four FIA stewards 37 minutes to decide that one track infringement at 15.09 hrs at Silverstone needs to

be investigated and it takes five times as long to reach a verdict, what time (allowing for British Summer Time) is it in Tokyo?

An additional paragraph in the FIA Sporting Regulations goes on to say: the answer must be submitted by the driver on a postcard to the FIA, Paris. In the interest of accuracy, the result will only be determined after an FIA official has travelled in secrecy to Japan and confirmed the time of day on the big clock in Tokyo Central railway station. In line with the FIA's Environmental Strategy, this journey will be overland and could take up to six months.

To be honest (and this is the serious bit), I can only assume the FIA has lost my phone number. In the days when I had a proper job before travelling the world to write about F1, I was an



A switch from accountancy served our scribe well but F1 is now in its own version of budgetary hell due to the cost cap

**SORRY, BUT WE CAN'T FULLY CONFIRM** the outcome of the 2022 F1 world championships just yet. The FIA Petty Cash Delegate is still examining the figures, and this may take some time.

There seems to be a discrepancy in Red Bull's accounts, under the heading 'Common Stock' and concerning hay claimed by Mr and Mrs Horner for horse riding while posing on Netflix. The FIA has also had Mr Verstappen produce a petrol receipt from Esso Express, West Coast Highway, Singapore, requesting a refund for reduced mileage during qualifying.

Speaking of refuelling, the catering column on Ferrari's Capital Expenditure apparently shows another tactical error by the Italians as the figure for pasta purchase is way up on last year, and not in line with a poor wheat harvest in Emilia Romagna. There's a problem, too, under 'Strops & Stuff' at Mercedes with a claim for extra headsets, owing to the team principal's habit of throwing his on the floor. Over at Alpine, under 'Liabilities', there's difficulty accepting what's termed as Extraordinary Legal Fees from Trowser-Legge & Co., family solicitors in Chipping Norton, for a late-night call to explain 'Heads of Agreement' in

articled clerk in an auditor's office at a time when computers had yet to change our lives. My role as a junior would be to help examine massive ledgers in linen mills, shipping companies, tea blenders and such like. I knew about double-entry bookkeeping, but failed to fully understand it thanks to devouring *Motoring News* and *Autosport* when I should have been studying accountancy textbooks.

But I did learn about devious methodology when it came to a junior clerk nicking postage stamps at Christmas time and the manager of a Belfast bakery slipping in a receipt for petrol when he ran a fleet of electric delivery vans (true!). This might have been the opposite to sidestepping the F1 cost cap in that the client was claiming all sorts of expenditure rather than

**I KNEW ABOUT DOUBLE-ENTRY BOOKKEEPING, BUT FAILED TO FULLY UNDERSTAND IT THANKS TO DEVOURING *MOTORING NEWS* AND *AUTOSPORT***





**Red Bull has been the main focus of everyone's attention with regard to the budget cap as F1 teams gets their heads around keeping forensic details of all of their spending**

burying it, but the same cunning mindset applied. Seeing clever costing at first hand would stand me in good stead when I needed to start filing expense claims to national newspapers.

These days, computerised till receipts listing every detail are the bane of media guys wishing to do a bit of creative accounting. It was never like this when receipts were hand-written and, preferably, illegible. The trick was to tip the waiters and have them slip blank receipts under the bills. On race morning, the press room would

be a hive of furtive activity as journos borrowed a neighbour's handwriting to create a meal more expensive than the one actually taken 12 hours before. Instead of discussing tyre strategies, the only question of importance was: "Does anyone know how to write 'fillet steak' in Spanish?"

Sometimes, the waiter might not play ball and fail to deliver the prized blanko. This would prompt subterfuge at the till as one member of the party fumbled with a fist-full of foreign currency while another spirited blank receipts

from the cashier's desk. But that could backfire if you didn't speak the lingo.

Japan was particularly difficult. If the restaurant's system was totally inflexible no amount of cajoling could persuade the waiter to split the bill, never mind indulge in receipt skulduggery. On one occasion, a member of our party – who wrote for a British tabloid but who had better remain nameless – triumphantly waved a purloined pink pad of receipts as we disappeared into the oriental evening.

The following morning, a Japanese journalist was approached with a view to filling in several slips with her native handwriting. A perplexed look on hearing this suggestion turned into snorts and sniggers as she examined the pink pad and explained it would look odd to have sushi and shabu-shabu on what was the lavatory attendant's check list.

Formula 1 accountants may have their problems with the cost cap, but they

don't know the half of how difficult life has become for the rest of us.



**In the days of paper receipts language issues presented both an opportunity and a problem for newspaper journalists looking to enhance their expenses, none more so than in Japan**





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STAR THOUGHT HE'D BLOWN  
HIS LAST CHANCE

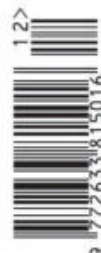


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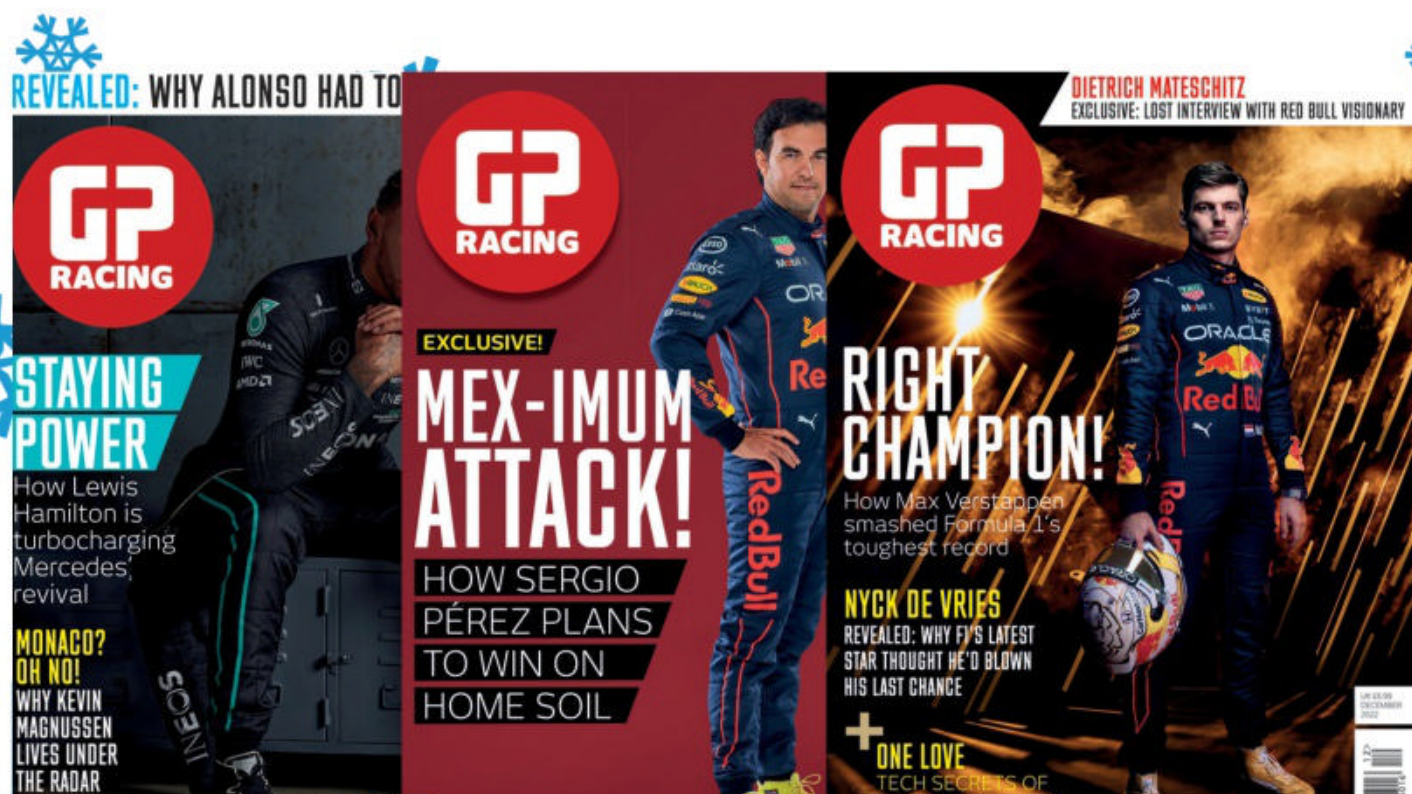
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FINISHING STRAIGHT

# RACE DEBRIEF

F1 WORLD CHAMPIONSHIP ROUND 19

## THE US GP IN 5 KEY MOMENTS



The two Safety Car periods (above and left) had a big effect on the race. Just like old times as Lewis and Max (top) chat after the race

### 1 Max vs Lewis all over again

**Lewis Hamilton fell just** over six laps short of extending his incredible streak of winning at least one race in each of his 15 seasons in F1. Instead, Max Verstappen achieved a new milestone – after passing the Mercedes driver on lap 50 of 56 in Austin, Max won his 13th grand prix of the season. Only Michael Schumacher and Sebastian Vettel have managed to do so before.

It wasn't the easiest weekend for the lead Red Bull driver. Max lost out to both Ferrari drivers in qualifying, but still earned the right to start from the front row thanks to Charles Leclerc's penalty for PU-element changes. After overtaking Carlos Sainz on the way up to the first corner right at the start

of the race, Max was initially able to forget Ferrari was even involved in the grand prix – Sainz spun after contact with George Russell. But the main challenges were still in store.

After the first third of the race it seemed to be following a familiar pattern in which Max pulled away from his rivals and went on to win comfortably. Hamilton, thanks to the aid of his team-mate in taking out Sainz, was second, but couldn't keep up with Verstappen. By lap 11 the gap to the two-time world champion amounted to almost 4.5 seconds, and Lewis had no obvious path to victory. But it was Hamilton's erstwhile team-mate who came to the rescue. On lap 17 Valtteri

Bottas dropped his Alfa Romeo into the gravel trap on the exit of the penultimate corner and race control had no choice but to deploy the Safety Car.

Not only was the entire gap between Max and Lewis eradicated, but also a Ferrari was back in Verstappen's rearview mirrors. Leclerc hadn't been *that* incisive in making his way past slower cars in the early laps, but the Scuderia (for a change) got lucky with Safety Car timing, and Charles got an opportunity to make a 'cheap' pitstop.

Another Safety Car period, which came straight after the first one, added an extra layer of intrigue. When the race went green again with 31 laps to go, the teams were presented with an

PICTURES: STEVEN TEE; MARK SUTTON; CARL BINGHAM



additional strategy option. A second pitstop, which seemed inevitable before the start given the tyre degradation at this circuit, was no longer required. But the leaders still opted to change tyres, since Hamilton's only chance to beat Max was to outfox him with strategy.

Mercedes called its driver to the pits on lap 34, and it was too risky for Red Bull to leave Max out. A lap later he also dived into the pitlane, but then disaster struck. Red Bull's pit crew, the barometer of excellence throughout the season, kept Max waiting for 11s owing to an issue with the front-left wheelgun. It was enough not only to cede the lead to Hamilton, but also to let Leclerc move ahead.

But Max wouldn't be Max had he decided to give up on the idea of winning. Having secured his second world title two weeks before this race, he still had no plans to slow down. His sarcastic and angry "beautiful, fucking beautiful" radio message after the slow pitstop might be seen as an act of disrespect to the team, but it's also a clear reminder Max requires no extra motivation – even if he has zero remaining championship goals for 2022.

RB18's phenomenal straightline speed came in handy. Max managed to pass Leclerc at only the second attempt, and after that essentially only needed to close the five-second gap to Hamilton. Once Verstappen had ticked that box, Lewis – whose W13 is still one of the slowest cars on the straights – hardly had any chance. Max got into the DRS zone behind Hamilton at the end of lap 49 and, by the middle of lap 50, was already leading the race after blasting past the Mercedes in the braking zone before Turn 12.

## 2 Ferrari fails to delay Red Bull's emotional triumph

**Red Bull earned the right** to be regarded as the strongest team on track this year, but its first constructors' title in nearly a decade was overshadowed by off-track events. In addition to the controversy over the team exceeding the budget ceiling for 2021, an even more unpleasant circumstance emerged Saturday before qualifying in Austin – company founder Dietrich Mateschitz passed away after a lengthy illness.

Winning the title the next day was symbolic.

Before the start of the US GP only Ferrari stood a theoretical chance of preventing Red Bull from winning the constructors' championship but, as has become a tradition for the Scuderia, it was unable to create any serious obstacles for its rival. In any case, even a best-possible result for Ferrari would only have required Verstappen and Pérez to finish in third and fourth to secure the title for the team.

The chances of a Ferrari 1-2 could be viewed as minimal the moment it became known Leclerc would be serving a penalty for turbocharger and engine changes. And then, seconds after the start of the race, Ferrari's dreams of victory took a further blow. Having surrendered the lead in the first meters after the start, Carlos Sainz tried to cut inside Max on the exit of Turn 1, which caught George Russell off guard. The Mercedes driver was battling team-mate Lewis Hamilton for P3 and was very late on the brakes – as a result smashing

into the Ferrari and sending it into a spin. Sainz managed to get going again, but only made it to the pits where he had to retire due to a water leak.

Leclerc, having started 12th, managed to accomplish the minimal goal – beating Sergio Pérez to the finish line thanks to the timely arrival of the Safety Car. But although the neutralisation of the race and Ferrari's timely stop appeared to have put Charles back in contention for the win, in reality the Ferrari – which had been quickest on Saturday – simply lacked sufficient race pace to allow him to compete with Verstappen and Hamilton.

Pérez, who had also lost five grid slots because of a penalty, finished fourth – even though he drove almost the entire race with a front wing damaged in a first-lap clash with Valtteri Bottas. Russell's five-second penalty, which the stewards awarded him for the collision with Sainz, eased Pérez's task, but even without it Checo almost certainly would have finished ahead of George, who declared the Austin race his "worst Sunday" of the year.

Pérez's points proved academic in terms of the constructors' title battle, since those amassed by Max for victory would be enough. As soon as Verstappen crossed the finish line, team principal Christian Horner was finally able to utter a line which circumstances and confusion with the rules didn't allow him to deliver in Japan. "Max Verstappen, you are world champion," he shouted on the radio in his signature voice for special occasions, adding, "We are world champions! Thank you so much. And thank you Dietrich Mateschitz for everything that you have done for us, for this team. This championship is for you." ▶



Sainz is left marooned on the opening lap after being hit by Russell at the first corner. All he could do was limp back to the pits





FINISHING STRAIGHT

## RACE DEBRIEF

F1 WORLD CHAMPIONSHIP ROUND 19



Alonso stops after his tangle with Stroll before going on to finish seventh, a position that was only confirmed on appeal

### 3 Alonso seventh after 'plane crash'

If there's one driver in F1 who can crash in the middle of the race, damage his car, but refuse to retire and still finish inside the top 10, it's Fernando Alonso. He'd done it a few years ago in Baku, crawling back to the pits virtually on two wheels and then finishing P7, but his Austin comeback was arguably even more spectacular, since he crashed into the back of Lance Stroll's Aston Martin at 184mph on the straight and then still managed to finish seventh.

The incident occurred on lap 22 – just after the first restart. Fernando got himself into the slipstream behind his future team-mate but, as soon as he tried to dodge out of it to pass, Lance also moved to the left. They touched, and Alonso's Alpine was sent flying. Fortunately the rear wheels remained in contact with the track, but he did hit the barrier – at an obtuse angle yet still at great speed. Incredibly, at no point did Fernando let the steering wheel go – and as soon as the car landed he quickly regained control.

Even more incredible was the fact that during his

pitstop the mechanics only had to change the front wing along with tyres. Fernando dropped back to 17th but, crucially, stayed in the race. Stroll's Aston Martin suffered significantly greater damage, to the extent that even Alonso wouldn't have been able to drive it, despite his undoubted talent for managing the unmanageable.

While the accident looked horrific, there was no spirited exchange between the drivers afterwards (perhaps with their future relationship in mind). Stroll stated that he left Fernando "plenty of room", and Alonso himself wasn't too angry afterwards, labelling the crash a "racing incident". It may be he didn't want to quarrel with his future colleague, or perhaps was simply delighted with his achievement at claiming a top-10 finish despite the spectacular contretemps. Alpine decided not to call Fernando in for an extra pitstop, which gave him track position as others pitted, and then his tyre-whispering magic did the rest. And even if Alonso couldn't hold on to P6 against Lando Norris, seventh – all things considered – was an excellent result.

### 4 ...but Alpine has to fight to keep it

For all the plaudits bestowed upon Alonso's drive, Haas team principal Guenther Steiner didn't particularly like the way one of Alonso's rear-view mirrors was left on a single mounting and clearly loose as a result of the crash, until it finally fell off a few laps before the finish. Haas eventually lodged a protest for which there were two main reasons.

Firstly, a potential penalty for Alonso would earn extra points for Kevin Magnussen. Secondly, three times during the season – in Canada, Hungary and Singapore – Magnussen has been shown the black and orange flag after damaging front-wing endplates in collisions. This compelled Haas to carry out unscheduled stops to fix the damage, and Steiner has criticised the FIA for these decisions.

During the race, Haas, seeing the condition of Alonso's car, twice contacted race control but says it never got a reaction. Fernando's car was ruled legal by the technical inspectors after the finish and only after Haas protested was Alonso penalised in the form of 30 seconds added to his race time, which served as a substitute for a stop-and-go.

PICTURES: STEVEN TEE; CARL BINGHAM; ANDY HONE; STEVE ETHERINGTON





Magnussen lost eighth to Vettel at the final corner, gained it when Alonso was penalised, but lost it again in the FIA hearing in Mexico

The wording of the document regarding Alonso's penalty was as peculiar as it gets. The stewards blamed Alpine for leaving the car out on track, but also criticised the FIA's race director Niels Wittich, stating that they were "deeply concerned" that Alonso wasn't given the black and orange flag, despite clear damage and two tip-offs from Haas.

Alpine sought to appeal the decision on the grounds that Haas's protest had been made 24 minutes after the deadline, requiring the scenario of a hearing to determine the admissibility of Alpine's protest before a separate hearing to preside over the case. This was initially rejected before the FIA granted Alpine a right to review and backtracked on the penalty itself, restoring Alonso to seventh. The details of these hearings and subsequent fall-out, best read with Boots Randolph's Yakety Sax (aka The Benny Hill Theme) playing in the background, are covered in the *Insider* section (p16).

## 5 Vettel nudges Aston Martin to the brink of passing Alfa Romeo

The Aston Martins were flying (and not always literally) in Austin. Lance Stroll earned fifth place on the grid in qualifying and, during the race, he and his team-mate Sebastian Vettel enjoyed some

involvement in the battle for leading positions with Mercedes, Red Bull and Ferrari. However, complications arose during the process of converting speed into a points-paying result.

After Stroll's crash, Aston Martin almost lost the opportunity to score points with the second car too. Sebastian Vettel briefly headed the field when the leaders were making their pitstops, but then became the victim of a hitch during his own stop – the Aston crew took six seconds to service him, and he emerged 13th. To Seb's credit, any thoughts of his imminent retirement don't impinge on his motivation to race, and his comeback became one of the highlights of the final phase of the grand prix. Vettel made his final pass, on Kevin Magnussen, at the penultimate corner.

The doughty performance impressed F1's viewers enough to earn Seb the 'Driver of the Day' award and, more importantly, earned much-needed points for the team which took it to three points behind Alfa Romeo in the constructors' standings.

The Astons showed some pace in Austin, but only one would end up in the points



# RESULTS ROUND 19

CIRCUIT OF THE AMERICAS /  
23.10.22 / 56 LAPS



1st	Max Verstappen	Red Bull	1h42m11.687s
2nd	Lewis Hamilton	Mercedes	+5.023s
3rd	Charles Leclerc	Ferrari	+7.501s
4th	Sergio Pérez	Red Bull	+8.293s
5th	George Russell	Mercedes	+44.815s
6th	Lando Norris	McLaren	+53.785s
7th	Fernando Alonso	Alpine	+55.078s
8th	Sebastian Vettel	Aston Martin	+65.354s
9th	Kevin Magnussen	Haas	+65.834s
10th	Yuki Tsunoda	AlphaTauri	+70.919s
11th	Esteban Ocon	Alpine	+72.875s
12th	Zhou Guanyu	Alfa Romeo	+76.164s
13th	Alex Albon	Williams	+80.057s*
14th	Pierre Gasly	AlphaTauri	+81.763s**
15th	Mick Schumacher	Haas	+84.490s***
16th	Daniel Ricciardo	McLaren	+90.487s
17th	Nicholas Latifi	Williams	+103.588s****

### Retirements

Lance Stroll	Aston Martin	21 laps - accident
Valtteri Bottas	Alfa Romeo	16 laps - spin
Carlos Sainz	Ferrari	1 lap - accident

### Fastest lap

George Russell 1m38.788s on lap 56

### TYRE COMPOUNDS USED



### CLIMATE



### AIR TEMP

32°C

### TRACK TEMP

39°C

### DRIVERS' STANDINGS

1 Verstappen	391pts	12 Ricciardo	29pts
2 Leclerc	267pts	13 Magnussen	24pts
3 Pérez	265pts	14 Gasly	23pts
4 Russell	218pts	15 Stroll	13pts
5 Sainz	202pts	16 Schumacher	12pts
6 Hamilton	198pts	17 Tsunoda	12pts
7 Norris	109pts	18 Guanyu	6pts
8 Ocon	78pts	19 Albon	4pts
9 Alonso	71pts	20 Latifi	2pts
10 Bottas	46pts	21 De Vries	2pts
11 Vettel	36pts	22 Hülkenberg	0pts







FINISHING STRAIGHT

## RACE DEBRIEF

F1 WORLD CHAMPIONSHIP ROUND 20

THE MEXICO CITY GP  
IN 5 KEY MOMENTS

Joy for Max as he sets a new record for the number of wins in a season. Pérez repeated his third place in his home race from 2021

# 1 Verstappen romps to record-breaking victory

**It was a case of déjà vu** all over again – at least in terms of the podium – as Max Verstappen won the 2022 Mexico City Grand Prix from Lewis Hamilton and Sergio Pérez, an exact recreation of the finishing order from the previous year. There was an element of familiarity, too, in the race itself: remarkably incident-free and cautiously processional, a consequence of drivers having to manage their tyres carefully in the thin air of Formula 1's highest track.

Different, though, were the circumstances of the championship. Last year there was all to play for in the title race; this time around the Mexico City GP was a dead rubber so far as the drivers'

and constructors' titles were concerned. All that remained was for Max to pass the record of 13 wins in a season, a mark he equalled in the US GP the previous weekend.

Verstappen did much of the heavy lifting on Saturday by outqualifying both his team-mate, Sergio Pérez, and the Mercedes pairing of Lewis Hamilton and George Russell. While this was perhaps Mercedes' best chance of winning this season, since the altitude negated much of the high drag which has been one of the W13's greatest weaknesses this season, it was still debatable whether either driver could annex pole. Russell said he was "kicking myself" after ruling himself out

with two mistakes on a scrappy final Q3 lap, but Hamilton had his first Q3 run deleted after straying over track limits. They were absolutely on the edge and Max was over three tenths ahead.

The next crucial box for Max to tick was the first corner on race day. There he rebuffed second-place starter Russell by braking to the inside more decisively, benefiting from his seemingly risky strategy of starting on the soft-compound Pirellis. Hamilton then nipped around his team-mate around Turn 2 and, inadvertently or otherwise, left his team-mate scrabbling for traction on the outer boundaries of the track at the exit of Turn 3. Pérez seized the moment to slot by into third.

PICTURES: STEVEN TEE; MARK SUTTON



The race then settled into tyre-management mode as the leading group pulled away while observing gaps of up to two seconds between one another; at this track running in 'dirty air' overheats the front brakes, cooking the front tyres. During this phase Verstappen was lapping at between six and seven seconds off his pole time and still no one could or would challenge his lead. Mercedes was content to sit it out, believing its strategy of starting on mediums and then going to hards would deliver an advantage in the final laps over Red Bulls going soft-medium.

But this scenario never played out. Hamilton pitted four laps later than Verstappen, at the end of lap 29, but the much-anticipated drop-off of Max's mediums never came. Neither could Russell overhaul Pérez, resulting in him making a late pitstop for softs to snatch the point for fastest lap. Max won by a comfortable 15.186s.

"Max, he's the first guy to convert a pole position into a race lead through Turns 1 and 2," said Red Bull team principal Christian Horner. "And really, he controlled the race from the very beginning, on those soft tyres, not warming them up too quickly, making sure there was longevity to them.

"He's got a tremendous feel for what the tyres need and they don't need. It's something he's developed, he's always been strong at it but, this year, he's been exceptional."

## 2 Ricciardo recovers his racing mojo as Alonso prays for the end

**Daniel Ricciardo admitted** during the weekend that he was unlikely to be on the grid for 2023 but in Mexico he left a calling card in the form of his most impressive race so far this season – although he was given a leg-up by the team's strategy and contrived to clumsily skittle another driver off-track while executing it.

Ricciardo also missed the cut for Q3, qualifying 11th. That encouraged the team to try the potentially riskier strategy of starting him on medium tyres and then swapping to softs. He lost two places at the start – to Yuki Tsunoda and Zhou Guanyu – but battled past the Alfa Romeo and remained close enough to move up the order as drivers ahead pitted, and was running eighth when he became the penultimate driver to stop, at the end of lap 44.

Norris, who started eighth but also lost two positions on the opening lap, had the more conventional medium-hard strategy but, like the Mercedes ahead and several other cars behind, found the hards too slow on race day. He pitted from 10th at the end of lap 31, emerged in 15th,

and faced a long slog back to the top 10 – during which he even suffered the indignity of being instructed not to impede his team-mate.

Ricciardo slotted back into the order from his stop in 13th and made blistering progress, quickly passing Sebastian Vettel but then struggling to dispatch Tsunoda with the same alacrity. After two laps on the AlphaTauri's tail Ricciardo lunged up the inside into Turn 6 and, as Tsunoda turned in, the McLaren clipped his rear wheel. Daniel later explained that he was trying to force his rival onto the dirty line around the outside, and that Tsunoda "could have left more room".

The stewards hit Ricciardo with a 10s penalty but, in a seemingly undamaged car, he carried on scything through the pack – nailing a crucial pass on Alpine's Esteban Ocon for seventh and then pulling out a 12s gap which enabled him to keep the place once the penalty was applied post-race.

That heaped further ordure onto a disappointing race for Alpine. While Ocon was labouring on the medium-hard strategy, team-mate Fernando Alonso was already out after his engine dropped onto five cylinders and then expired.

Afterwards Alonso was unequivocal, complaining the team was "unprepared" and that it always seemed to be his engines which blew up. Asked if he was counting down the races until the end of his tenure with the team, he said, "Yes. 100%" ▶



Ricciardo had no reason to hide his face on race day (above, left). He put in a great final stint on the soft tyres to come home seventh





FINISHING STRAIGHT

## RACE DEBRIEF

F1 WORLD CHAMPIONSHIP ROUND 20

## 3 Ferrari's road to nowhere

**Charles Leclerc described** the Mexico City GP as "one of the worst races" for Ferrari this year and it is hard to disagree with this pithy conclusion. This was the first event in 2022 in which neither of Ferrari's drivers has offered a credible challenge for pole position or the race win.

Throughout practice the F1-75s had looked sluggish, badly discombobulated by the kerbs, and reluctant to turn despite running in high-downforce trim. When Ferrari tried a low-drag configuration in FP2 Leclerc shunted. Also, the engines had to be turned down to avoid a reoccurrence of Sainz's fiery retirement in Austria, another race held at altitude.

"We are not as efficient or we didn't have the capacity at least to run maximum power here," explained team principal Mattia Binotto.

Carlos Sainz qualified fifth, six tenths off Verstappen's pole time, and Leclerc was a further two tenths in arrears. Both started on softs,

which turned out to be the faster strategy for the frontrunners, but neither could keep up even when the leaders were tyre-managing early in the race. Leclerc passed Valtteri Bottas for sixth at the start but by the time the lap count reached double figures the two Ferraris were struggling to keep the top four in sight.

Sainz finished fifth, a minute behind Verstappen, and nine seconds behind fourth-placed Russell even though the Mercedes had made a late pitstop. Leclerc was 10 seconds behind his team-mate.

"It was incredibly difficult, we were just so slow," said Leclerc. "We need to look into it. We were in the middle of nowhere. With Carlos, we were way slower compared with the Mercedes and Red Bull, [but] much quicker than the midfield.

"So we were on our own, just a very lonely race. To be honest there wasn't much more we could have done today."

"In terms of power unit, we were not at our best

performance for the weekend, but I don't think that that's explaining the most," said Binotto. "That's part of the equation, but there is more than that. The ride was not great. The balance was not great."

## 4 Promising Alfa pace evaporates on race day

**Tenth place and one** point seemed like scant return for Valtteri Bottas after qualifying sixth on the grid, but it was probably an accurate reflection of where Alfa Romeo is at season's end: better, after upgrades fitted at Suzuka and the Circuit of The Americas, but still not in contention for 'best of the rest' status. Team-mate Zhou Guanyu missed out on scoring after failing to make the cut for Q3 and then becoming mired in a DRS train after his pitstop.

Bottas had been encouragingly rapid in practice, buoyed by recent upgrades whose effects were masked in Austin by his spin and Guanyu's scrappy race. Sixth on the grid, outqualifying Charles Leclerc, seemed like a remarkable feat but Bottas went backwards on race day, dropping behind Leclerc and Fernando Alonso by taking a somewhat conservative approach to the first series of corners.

He stayed on Alonso's tail for most of the first stint but that merely overheated his brakes. When Alonso picked up his pace, Bottas was unable to elevate his own speed to that level. Once on the hard-compound Pirellis for the second stint he

**Leclerc's Mexico City GP started badly with this heavy FP2 shunt on Friday afternoon and didn't really improve after that**

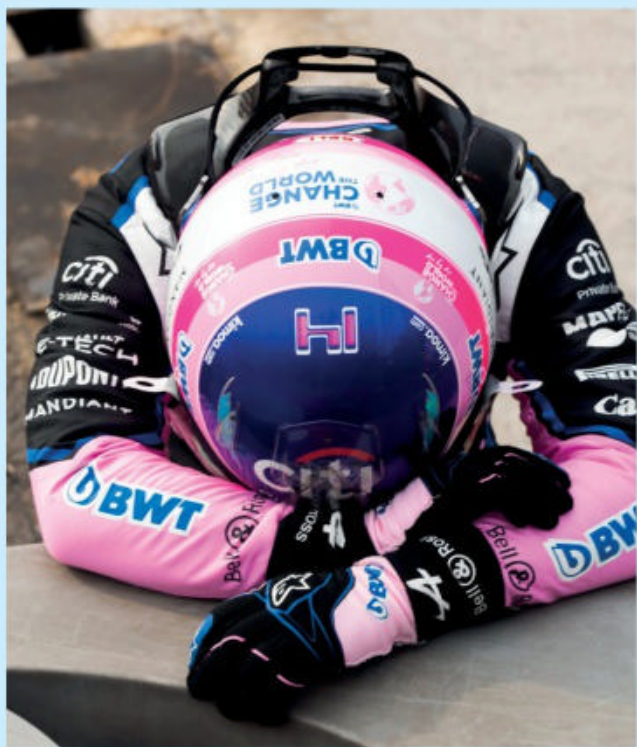


PICTURES: ANDY HONE; SAM BLOXHAM; CARL BINGHAM; MARK SUTTON





Bottas qualified superbly, beating a Ferrari into sixth, but the Alfa's lack of race pace meant he slid down the order to 10th



Mexico ended badly for Alonso after a third engine-related retirement in five races, a stat that wasn't lost on him

began to struggle even more, losing ninth place to McLaren's Lando Norris in the final laps.

"I had to save the brakes a bit but actually, at the



end of the first stint, I couldn't keep up with Alonso," said Bottas. "In the beginning we felt strong but towards the end he was going away.

"I just couldn't get the hard tyre to work, especially the front axle. It was below the working range all the time. I think if I could do the race again I would for sure go for the soft tyre [in the final stint]. There were some cars that were really flying on the soft tyre. Today, race pace-wise Alpine and McLaren seemed faster so we weren't far off where we belonged."

## 5 Gasly mortified at prospect of race ban

**Pierre Gasly said he intends** to hold talks with FIA officials after receiving yet more points on his licence in Mexico. He is now just two points short of an automatic one-event suspension – and not only that, he will remain so until next May.

In Mexico City he picked up a point, as well as a five-second penalty, with a somewhat ambitious lunge on the struggling Aston Martin of Lance Stroll, during which he forced Stroll off-track and was deemed to have gained an advantage by leaving the track himself. After the race he expressed frustration that he wasn't told to give the position back.

"I'm a racing driver, and if I see a gap I will go for the gap," he said. "And if you're not happy about it, tell me to give the position back, and then I'll try again. I wasn't given any comments, so that is a shame.

"They [race control] just need to say it on the radio and that is what they have done in the past but, for some reason, not this time."

Gasly collected the first points on his licence on 22 May during the Spanish Grand Prix, which means they will not come off until next year's Emilia Romagna GP (21 May).

**Gasly's clash with Stroll has left him two penalty points away from a suspension**

## RESULTS ROUND 20

### AUTÓDROMO HERMANOS RODRÍGUEZ / 30.10.22 / 71 LAPS



1st	Max Verstappen	Red Bull	1h38m36.729s
2nd	Lewis Hamilton	Mercedes	+15.186s
3rd	Sergio Pérez	Red Bull	+18.097s
4th	George Russell	Mercedes	+49.431s
5th	Carlos Sainz	Ferrari	+58.123s
6th	Charles Leclerc	Ferrari	+68.774s
7th	Daniel Ricciardo	McLaren	+1 lap*
8th	Esteban Ocon	Alpine	+1 lap
9th	Lando Norris	McLaren	+1 lap
10th	Valtteri Bottas	Alfa Romeo	+1 lap
11th	Pierre Gasly	AlphaTauri	+1 lap
12th	Alex Albon	Williams	+1 lap
13th	Zhou Guanyu	Alfa Romeo	+1 lap
14th	Sebastian Vettel	Aston Martin	+1 lap
15th	Lance Stroll	Aston Martin	+1 lap
16th	Mick Schumacher	Haas	+1 lap
17th	Kevin Magnussen	Haas	+1 lap
18th	Nicholas Latifi	Williams	+2 laps
19th	Fernando Alonso	Alpine	63 laps/power unit

#### Retirements

Yuki Tsunoda AlphaTauri 50 laps - collision

#### Fastest lap

George Russell 1m20.153s on lap 71

#### TYRE COMPOUNDS USED



#### CLIMATE

Sunny

#### AIR TEMP

30°C

#### TRACK TEMP

44°C

#### DRIVERS' STANDINGS

1 Verstappen	416pts	12 Ricciardo	35pts
3 Pérez	280pts	13 Magnussen	24pts
3 Leclerc	275pts	14 Gasly	23pts
4 Russell	231pts	15 Stroll	13pts
5 Hamilton	216pts	16 Schumacher	12pts
6 Sainz	212pts	17 Tsunoda	12pts
7 Norris	111pts	18 Guanyu	6pts
8 Ocon	82pts	19 Albon	4pts
9 Alonso	71pts	20 Latifi	2pts
10 Bottas	47pts	21 De Vries	2pts
11 Vettel	36pts	22 Hülkenberg	0pts







FINISHING STRAIGHT

## RACE PREVIEW

F1 WORLD CHAMPIONSHIP ROUND 22

## ABU DHABI GP

18-20 November 2022

Yas Marina



PICTURE: FRANCIS VERMEULEN. ILLUSTRATION: ALAN ELDRIDGE

## THE MAIN EVENT

**The much-maligned** Yas Marina track was modified last year in an effort to purge this venue of its reputation for producing jejune races. While the 2021 Abu Dhabi GP was anything but, that had little to do with alterations to the layout, over which the jury is very much still out.

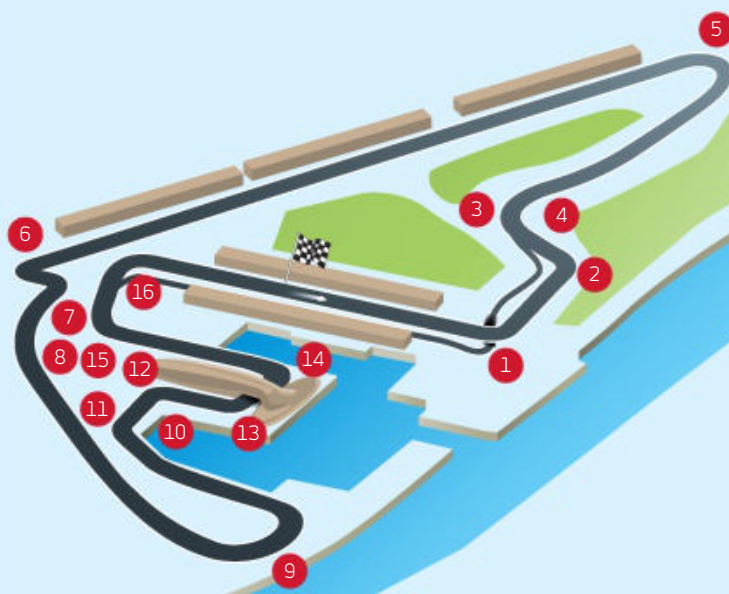
Eliminating the fiddly Turns 4-5-6 in favour of a single hairpin made progress through there less processional. Elsewhere Turns 11-14 were consolidated into a sweeping curve and the section which passes under the hotel was reprofiled to be less stop-start. Last year's race suggested this latter change may have been ill-advised since it is difficult to extract cars which have shunted there.

## 2021 RACE RECAP

An event which will linger long in the memory for all the wrong reasons after an all-advised intervention from the race director. Max Verstappen and Lewis Hamilton arrived equal on points and Max put his Red Bull on pole, but it was Lewis who snatched the lead at the start.

When Nicholas Latifi crashed out five laps from the end and the Safety Car was deployed, Hamilton stayed out but Verstappen pitted for fresh tyres – had Lewis pitted, of course, Max would have done the opposite and taken the lead. The laps counted by with them one-two but with five lapped cars between them. Race director Michael Masi's decision to wave just those cars by before the Safety Car came in guaranteed a racing finish but one in which Lewis was at a disadvantage – and, as Max blasted by to win the race and the drivers' title, the controversy began...

**KEY CORNER: TURN 9** This new element of the Yas Marina circuit didn't have much of a chance to shine last year, along with most of the tweaks to the layout. But perhaps now the new ground-effect cars will allow the banked curve to play more of a role.



## RACE DATA

**Venue** Yas Marina**First GP** 2009**Number of laps** 58**Circuit length** 3.281 miles**Race distance** 191.633 miles**Lap record** 1m26.103s

Max Verstappen (2021)

**F1 races held** 13**Winners from pole** 8**Pirelli compounds** C3, C4, C5

## CAR PERFORMANCE

**Downforce level** Medium**Cooling requirement** Medium**Full throttle** 60%**Top speed** 208mph**Average speed** 124mph

## TIMETABLE (UK TIME)

**Friday** 18 November**Practice 1** 10:00-11:00**Practice 2** 13:00-14:00**Saturday** 19 November**Practice 3** 10:30-11:30**Qualifying** 14:00-15:00**Sunday** 20 November**Race** 13.00**Live coverage** Sky Sports F1**Highlights** Channel 4

## THE PAST FIVE WINNERS HERE



2021

Max  
Verstappen  
Red Bull

2020

Max  
Verstappen  
Red Bull

2019

Lewis  
Hamilton  
Mercedes

2018

Lewis  
Hamilton  
Mercedes

2017

Valtteri  
Bottas  
Mercedes





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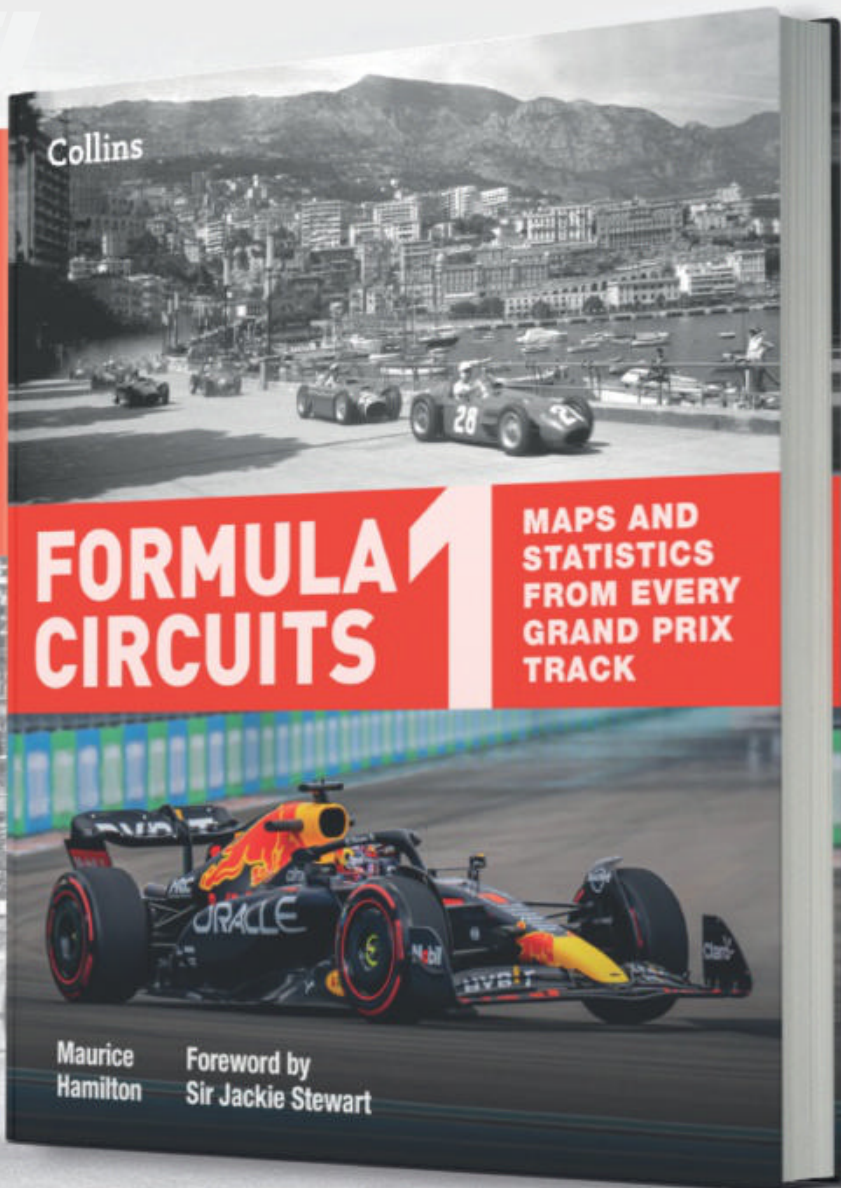
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### FERRARI F40

**Author** Keith Bluemel

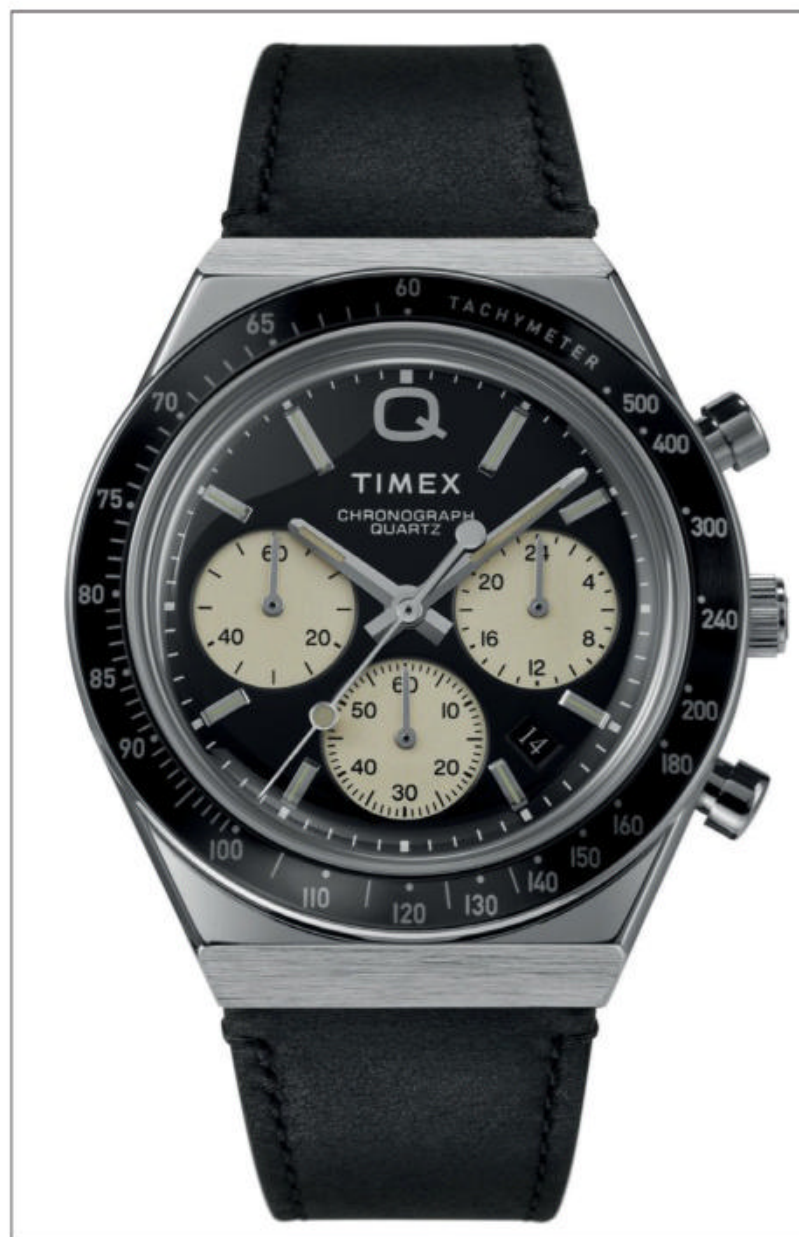
**Price** £69

[porterpress.co.uk](http://porterpress.co.uk)

During the 1980s Ferrari developed two advanced, evocative limited-production models which aimed to be the definitive race cars for the road. While the 288 GTO was impressive, its sequel, the F40, became beguilingly iconic. Its frill-free interior (early models had sliding side windows, and the door 'handle' was a fabric strap) felt properly race-bred and the extensive use of composites in the body and chassis represented a

genuine engineering crossover from contemporary F1. Examples of the F40 remain prized by collectors.

Author Keith Bluemel is a life member of the Ferrari Owners' Club of Great Britain and has acted as a judge at prestigious concours events. As such the contents are not only painstakingly accurate, but blessed with access to insider figures such as engineer Nicola Materazzi and development driver Dario Benuzzi.



### Q TIMEX CHRONOGRAPH

**Price** £180-£200

[timex.co.uk](http://timex.co.uk)

Another watch manufacturer on the anniversary trail is quartz pioneer Timex. In 1972 the company produced its first quartz watch, the Q Timex, and, over the course of the decade, quartz movements quickly took the place of mechanical ones owing to their greater accuracy and cost-effectiveness. The new Q Timex Chronograph takes its inspiration

from the original watch, one often used by racing drivers of the day.

Within a black tachymeter bezel lie contrasting sub-dials and hand-applied dimensional indices against a cream or jet black dial. The case and crown are brushed and polished stainless steel and the watch is available with a leather strap or a stainless steel bracelet.









FINISHING STRAIGHT

## THE FINAL LAP

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FLAT  
CHAT{ FULL THROTTLE  
MUSINGS WITH  
**MATT KEW** }NOTHING IS  
CLEAR IN THE  
FIA'S MIRROR

**You've almost got to admire** the FIA for the timing of its unintentional bait-and-switch. Here we all were, worried about how the governing body would punish Red Bull for overspending in 2021 – would the penalties be too lenient and therefore undermine the sanctity of the cost cap? But the true absurdity came in the attempts to decide the comparatively small-fry issue of seventh place in the United States Grand Prix. With this, the FIA stuck to form this year by seeking to produce clarity and consistency, only to bring about the exact opposites.

As a recap, Fernando Alonso was demoted eight places to 15th at Austin courtesy of a 30s penalty. This followed Haas lodging a complaint because Fernando had been driving with a flapping wing mirror as a legacy of his airborne shunt with Lance Stroll. As such, Alonso should have copped the same black-and-orange flag waved

at Kevin Magnussen in Canada, Hungary, and Singapore. That would have established the fabled consistency. Alpine then attempted to protest the protest since race control hadn't given the instruction that the car was unsafe. But the team wasn't regulated to lodge a direct appeal, at least in the first instance.

However, Alpine could eventually question the decision when it later fielded new and significant evidence. This came in the form of proving Haas handed in its workings out 24 minutes late but



**Alonso, with the offending mirror now gone, went on to finish seventh in Austin, but it took the FIA four more days to confirm this**

had full capacity to meet the 30-minute deadline. All told, the original Haas protest was adjudged inadmissible, making it null and void, so Alonso could have seventh reinstated. Phew.

Reversing the penalty was logical enough. But the whole saga had to drag on to the next weekend in Mexico and raised further questions about the FIA's conflicted decision-making process and what precedents it wishes to define. Sticking to type, the governing body made missteps, didn't deliver anything resembling consistency and even managed to inspire internal conflict for good measure.

Haas reckoned it could have met the original deadline on Sunday night in Texas had it not been for an FIA official wrongly telling the team it had an hour, rather than the actual 30 minutes, to get its case together. And it's on those grounds that Alonso was restored to seventh. As such, the confusion and delay could have been avoided had the FIA not got its own rules muddled –

regardless of whether Haas should have known the regulations anyway.

But that's just the paperwork that came after the event. It still doesn't handle the initial Haas chagrin in so far as Alonso was allowed to race with a damaged car. Just like Magnussen hadn't been able to on three occasions previously, something the team can argue has had a material effect on its points tally. Here enters the inconsistency, both over how the two drivers were (or weren't) cautioned and the discrepancy over what constitutes a dangerous and damaged car. Good job Alonso's mirror eventually flew off harmlessly and didn't clonk someone on the helmet or get itself wedged in another car to induce a retirement.

And here lies the internal conflict that's now been inspired. Tellingly, in the FIA report issued in Mexico, the stewarding panel acknowledged that they were "deeply concerned" Alonso was able to circulate without having been flagged by their own colleagues in race control.

The FIA's report into this whole distraction has concluded the usual. It's promised to review the process, put in place preventive measures, etcetera, etcetera. But, yet again in 2022, it feels as though F1 is being underpinned and undermined by a rulebook that is poorly written, poorly understood and poorly applied.





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